جامعة الملك سعــود **اسم الطالـــــب :.....**

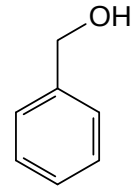
كلية العلوم – قسم الكيمياء **الـــرقم الجامعي:.....**

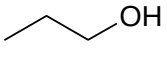
الزمن : ساعةونصف

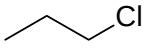
اختبار أعمال فصلية (١) لطلاب المقرر ١٠٦كيم للفصل الدراسي الأول للعام ١٤٢٩-١٤٣٠هـــ

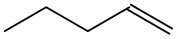
السؤال الأول: دائرة حول الإجابة الصحيحة فقط فيما يلي :

١-المركب الأكثر ذوبانية في الماء هو:

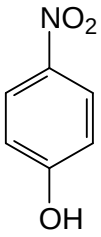
أ- 

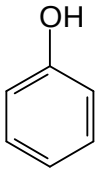
ب- 

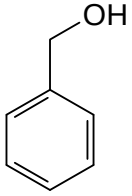
ج- 

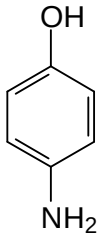
د- 

٢-المركب الأكثر حمضية :

أ- 

ب- 

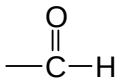
ج- 

د- 

٣- التفاعلات الرئيسية لحلقة البنزين هي :

أ- إضافة الكتروفيلية ب- إضافة نيكلوفيلية

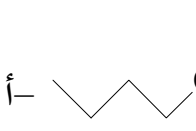
ج- أستبدال الكتروفيلي د-استبدال نيكلؤفيلي

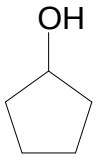
٤- تعتبر مجموعة الالدهيد  .

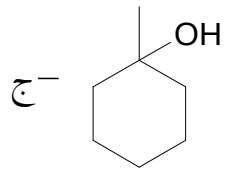
أ- مثبطة وموجهه الى o,p ب- مثبطة وموجهه الى m

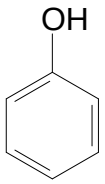
ج- منشطة وموجهه الى o,p د- منشطة وموجهه الى m

٥- الكحول الثانوي هو:

أ- 

ب- 

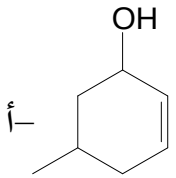
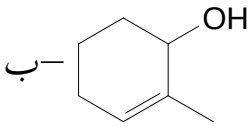
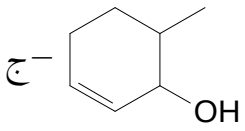
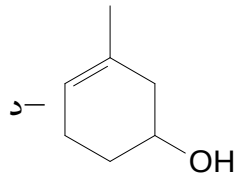
ج- 

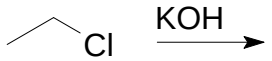
د- 

٦- المركب الذي لا يتأكسد بواسطة $KMnO_4$

أ- Toluene
ب- كحول ثانوي
ج- كحول أولي
د- t-Butanol

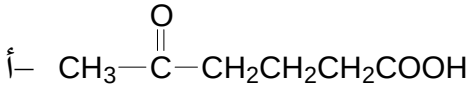
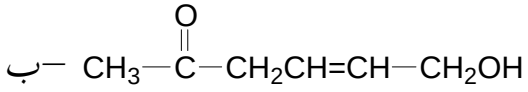
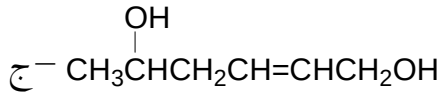
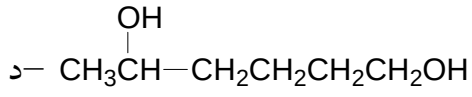
٧- صيغة المركب 5-Methyl-2-cyclohexenol هي:

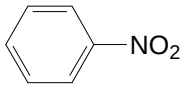
أ- 
ب- 
ج- 
د- 

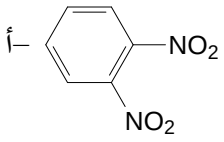
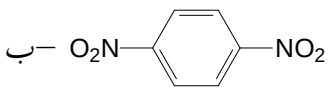
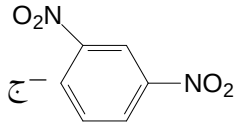
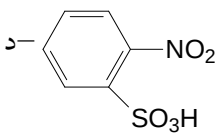
٨- يصنف التفاعل 

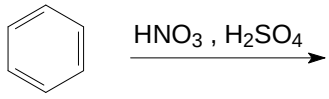
أ- استبدال الكتروفيلي
ب- إضافة نيكلوفيلية
ج- استبدال نيكلوفيلي
د- انتزاع

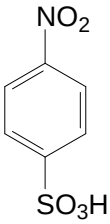
٩- الناتج الرئيسي لأختزال  بواسطة $LiALH_4$ ثم بتحلل الناتج(H_3O^+) هو:

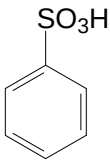
أ- 
ب- 
ج- 
د- 

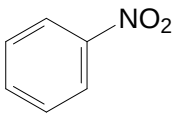
١٠- عند تفاعل  مع HNO_3/H_2SO_4 يكون الناتج النهائي:

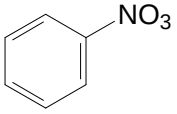
أ- 
ب- 
ج- 
د- 

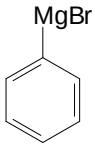
١١- ناتج التفاعل  هو:

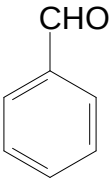
أ- 

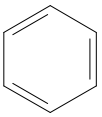
ب- 

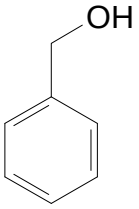
ج- 

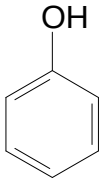
د- 

١٢- ناتج تفاعل  مع فورمالدهيد (CH_2O) متبوعاً بالتمیؤ الى تكون.

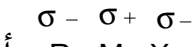
أ- 

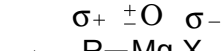
ب- 

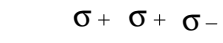
ج- 

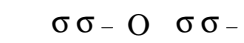
د- 

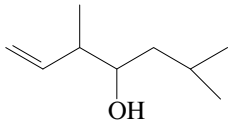
١٣- الأستقطاب في مركب جرينارد يكون على شكل .

أ- 

ب- 

ج- 

د- 

١٤- الأسم النظامي للمركب  هو:

أ- 3-Methyl-1-octen-4-ol
ب- 3,6-dimethyl-3,4-heptenol
ج- 2,5-dimethyl-6-hepten-4-ol
د- 3,6-dimethyl-1-hepten-4-ol

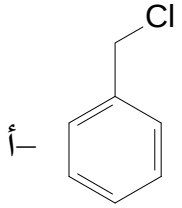
١٥- المركب الأعلى درجة غليان هو:

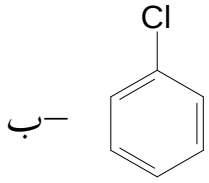
أ- 2-Ethylpropane
ب- 1,3-pentadiene
ج- 2-pentanylchloride
د- pentanol

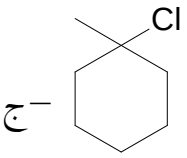
١٦- يحضر الأستر من تفاعل

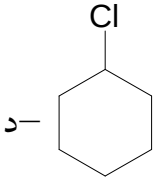
أ- كحول + كيتون
ب- هاليد عضوي + حمض كربوكسيلي
ج- كحول +الدهيد
د- حمض كربوكسيلي + كحول

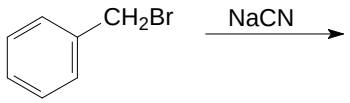
١٧- الهالوالكان الثانوي هو :

أ– 

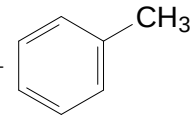
ب– 

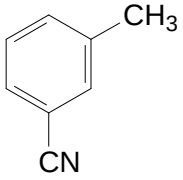
ج– 

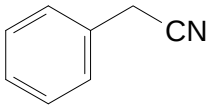
د– 

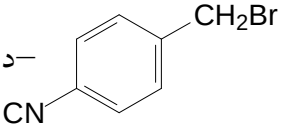
١٨- يعطي التفاعل 

التالي ؟

أ– 

ب– 

ج– 

د– 

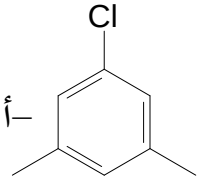
١٩- ماهي المادة المساعدة التي تحول اسيتون إلى isopropanol .

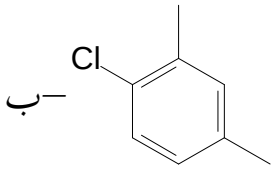
أ– $NaBH_4$ ب– HCl ج– $AlCl_3$ د– $KMnO_4$

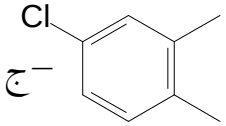
٢٠- ناتج إضافة الماء إلى $C_6H_5CH_2MgBr$ هو :

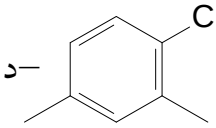
أ- benzylacohol ب- Benzoic acid
ج- Toluene د- methylphenol

٢١- الصيغة البنائية للمركب 4-chloro-1,2-dimethylbenzene

أ– 

ب– 

ج– 

د– 

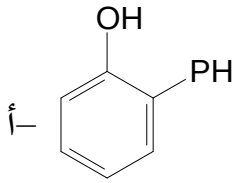
٢٢- يتأكسد cyclopentene بواسطة $KMnO_4$ ليعطي :

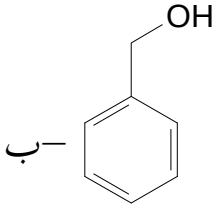
أ- Diole ب- Cyclopentanone
ج-cyclopentanol د- dialdehyde

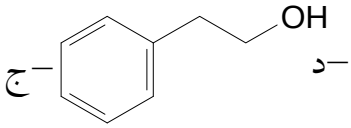
٢٣- العامل المختزل المناسب لأختزال الألدهيد الى كحول هو :

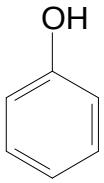
أ– CrO_3 ب– $AlCl_3$ ج– $NaBH_4$ د– $KMnO_4$

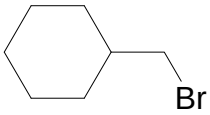
٢٤- الصيغة البنائية لمركب Benzylalcohol هو:

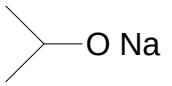
أ- 

ب- 

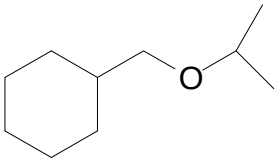
ج- 

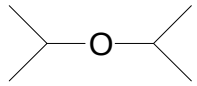
د- 

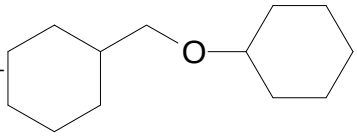
٢٥- ناتج التفاعل 

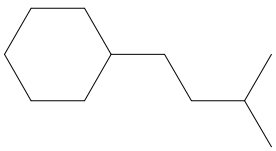
+ 

هو:

أ- 

ب- 

ج- 

د- 

وبالله التوفيق
أ.د.حسان بكر أمين

جامعة الملك سعود - كلية العلوم – قسم الكيمياء

الاختبار الفصلى الثانى في مقرر ١٤٥ كيم (١٠-٦-١٤٣١هـ)

الزمن: ٩٠ دقيقة

أسم الطالب: **رقم الطالب:**

نموذج الأجابة:

ملاحظة هامة: تصحيح الإمتحان سيكون بناء علي الأجابة المكتوبة فى الجدول أسفل (حرف الإجابة الصحيحة) ولن ينظر الى بقية الأوراق والتي تعتبر مسودة .

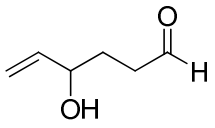
رقم السؤال	الإجابة	رقم السؤال	الإجابة
1		16	
2		17	
3		18	
4		19	
5		20	
6		21	
7		22	
8		23	
9		24	
10		25	
11		26	
12		27	
13		28	
14		29	
15		30	

جامعة الملك سعود - كلية العلوم – قسم الكيمياء

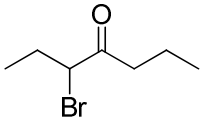
الاختبار الفصلى الثانى في مقرر ١٤٥ كيم (١٠-٦-١٤٣١هـ)

الزمن: ٩٠ دقيقة

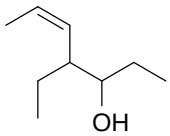
أسم الطالب: **رقم الطالب:**

1- The correct name of the following compound  is

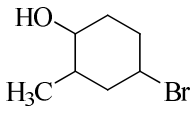
A) 3-hydroxyhexanal
B) 3-hydroxy-4-hexenal
C) 4-hydroxy-5-hexenal
D) 3-hydroxy-1-hexenal

2- The IUPAC name of  is:

A) 3-bromo-4-heptanone
B) 5-bromo-4-heptanone
C) 3-bromo heptanone
D) 4-bromo-3-heptanone

3- The IUPAC name of  is:

a) 4-Ethyl-5-heptyn-3-ol
b) 4-Ethyl-5-heptan-3-ol
c) 4-Ethyl-5-hepten-3-ol
d) 4-Ethyl-2-hepten-5-ol

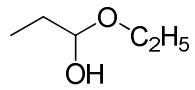
4- The IUPAC name of  is:

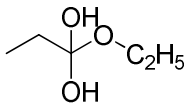
a) 3-Methyl-1-bromocyclohexanol
b) 2-Bromo-3-methylcyclohexanol
c) 4-Bromo-2-methylcyclohexanol
d) 3-Bromo-1-methylcyclohexanol

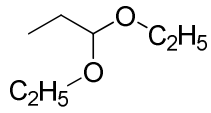
5- Addition of Grignard Reagent (RMgX) to ketone gives

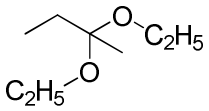
A) Primary alcohol
B) Secondary alcohol
C) Tertiary alcohol
D) Carboxylic acid

6- The structure of Acetal is:

A) 

B) 

C) 

D) 

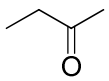
7- Reaction of phenyhydrazine with aldyhydes or ketones gives:

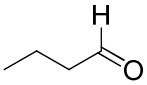
A) Oxime B) Phenylhydrazone C) Imine D) Hemiacetal

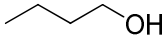
8- The common name of 2-methyl-2-propanol is:

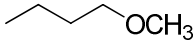
A) Allyl alcohol
B) Isopropyl alcohol
C) *tert*-Butyl alcohol
D) Benzyl alcohol

9- Which of the following compounds has the highest boiling point?

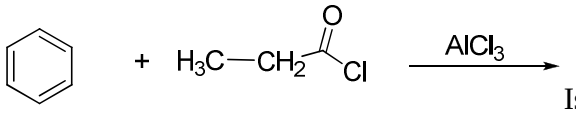
A) 

B) 

C) 

D) 

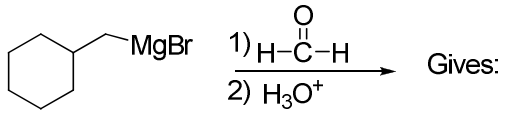
10- The product of the following reaction

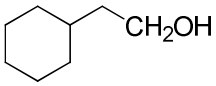


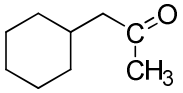
Is:

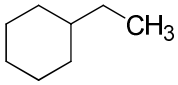
A) Acetophenone
B) Ethylphenyl ketone
C) Ethylbenzene
D) Phenylpropyl ketone

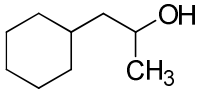
11- The following reaction gives



A) 

B) 

C) 

D) 

12- What is the structural formula of **A** in the following Reaction?

A $\xrightarrow{O_3/Zn/H_2O}$ $CH_3\text{-}CH_2\text{-}C(=O)H$ + $CH_3\text{-}C(=O)\text{-}CH_3$

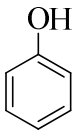
a) $CH_3\text{-}CH_2\text{-}CH{=}CH\text{-}CH_3$

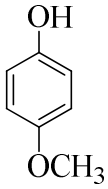
b) $CH_3\text{-}CH_2\text{-}C(CH_3){=}C(CH_3)\text{-}CH_2\text{-}CH_3$

c) $CH_3\text{-}CH_2\text{-}C(CH_3){=}C(CH_3)\text{-}CH_3$

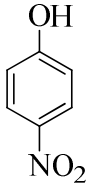
d) $CH_3\text{-}CH_2\text{-}CH{=}C(CH_3)\text{-}CH_3$

13- The most acidic compound is:

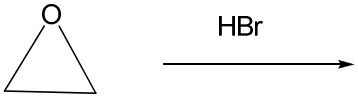
A) 

B) 

C) CH_3CH_2OH

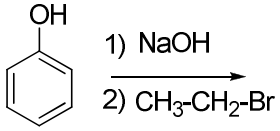
D) 

14- The following reaction gives



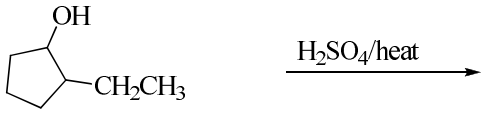
A) 2-bromoethanol B) Ethanol C) Ethane D) Bromoethane

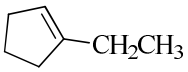
15- The following reaction gives:

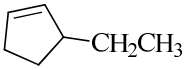


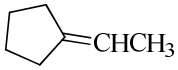
A) 4-Ethylphenol
B) 2-Ethylphenol
C) Ethylphenyl ether
D) Ethylphenyl ketone

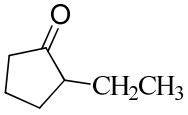
16- The main product from the following reaction is:

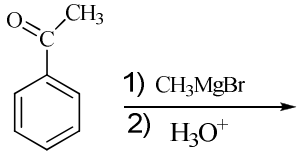


A) 

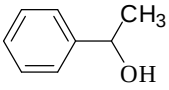
B) 

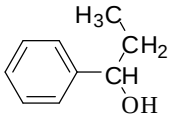
C) 

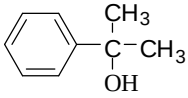
D) 

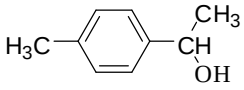
17- The following reaction 

gives:

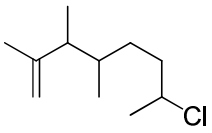
a) 

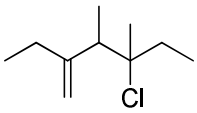
b) 

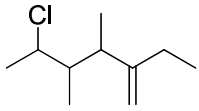
c) 

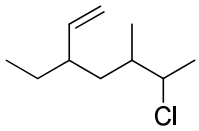
d) 

18- The structure of 5-Chloro-2-ethyl-3,4-dimethylhexene is:

A) 

B) 

C) 

D) 

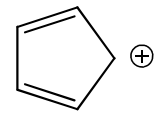
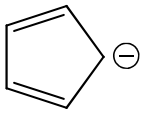
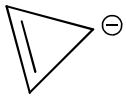
19- The reaction of Propyl bromide with NaOH is

A) Nucleophilic addition
B) Nucleophilic substitution
C) Electrophilic substitution
D) Electrophilic addition

20- Which of the following groups deactivate the benzene ring?

A) –OH B) –COOH C) $-NH_2$ D) $-OCH_3$

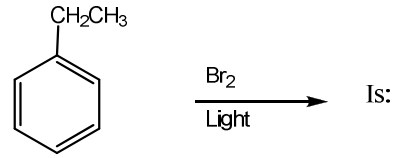
21- Which of the following compounds is aromatic?

A)  B)  C)  D) 

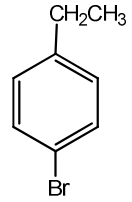
22- Bromination of the benzene ring is:

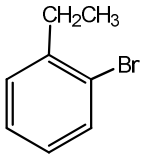
A) Electrophilic addition reaction..
B) Electrophilic substitution reaction.
C) Nucleophilic substitution reaction.
D) Nucleophilic addition reaction.

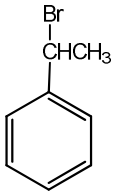
23- The main product of the following reaction

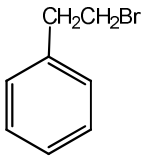


Is:

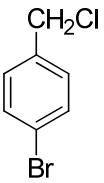
A) 

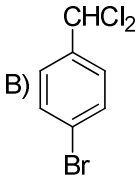
B) 

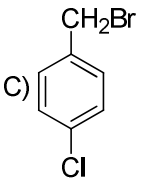
C) 

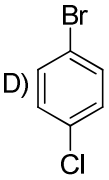
D) 

24- The structure of p-bromobenzylchloride is:

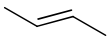
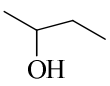
A) 

B) 

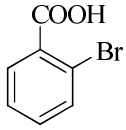
C) 

D) 

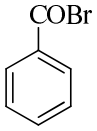
25- Which one of the following compounds undergoes the Electrophilic Substitution Reaction:

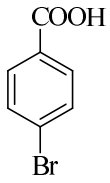
A)  B)  C)  D) 

26- Reaction of benzoic acid with $Br_2/AlBr_3$ gives:

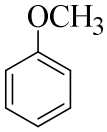
A) 

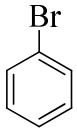
B) 

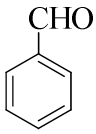
C) 

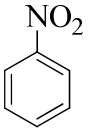
C) 

27- The most reactive compound towards sulphonation is

A) 

B) 

C) 

D) 

28- The most acidic alcohol is:

A) $CH_3CH_2CH_2$-OH

B) $CH_3\underset{\underset{OH}{|}}{C}HCH_3$

C) Cl_3C-CH_2-OH

D) $H_3C-\underset{\underset{OH}{|}}{\overset{\overset{CH_3}{|}}{C}}-CH_3$

29- The product of the following reaction is:

$$CH_3CH_2CH_2OH \xrightarrow{SOCl_2}$$

A) Propene

B) Dipropyl ether

C) 2-chloropropane

D) 1-chloropropane.

30- The product of the following reaction is:

$$CH_3\underset{\underset{CH_3}{|}}{C}HOCH_2CH_3 + 2\ HI\ (excess) \xrightarrow{Heat}$$

A) Ethanol and propanol
B) Ethyl iodide and water
C) Isopropyl iodide and water
D) Isopropyl iodide , ethyl iodide and water

جامعة الملك سعود - كلية العلوم – قسم الكيمياء

الاختبار الفصلي الثاني في مقرر 145 كيم (1432-1431هـ)

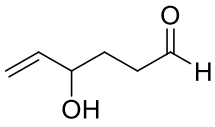
الزمن:

أسم الطالب: **رقم الطالب:**

نموذج الإجابة:

ملاحظة هامة: تصحيح الامتحان سيكون بناء علي الإجابة المكتوبة في الجدول أسفل (حرف الإجابة الصحيحة) ولن ينظر إلى بقية الأوراق والتي تعتبر مسودة .

رقم السؤال	الإجابة	رقم السؤال	الإجابة
1		14	
2		15	
3		16	
4		17	
5		18	
6		19	
7		20	
8		21	
9		22	
10		23	
11		24	
12		25	
13			

1- The correct name of the following compound  is:

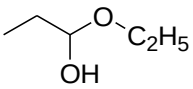
A) 3-hydroxyhexanal

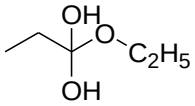
B) 3-hydroxy-4-hexenal

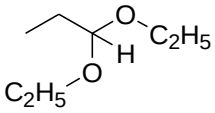
C) 4-hydroxy-5-hexenal

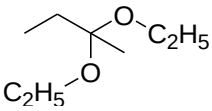
D) 3-hydroxy-1-hexenal

2- The structure of Acetal is: C

A) 

B) 

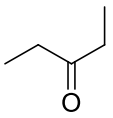
C) 

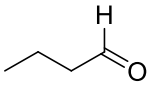
D) 

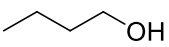
3- Reaction of phenyhydrazine with carbonyl compounds (aldyhydes or ketones) gives:

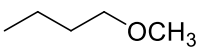
A) Oxime B) Phenylhydrazone C) Imine D) Hemiacetal

4- Which of the following compounds has the highest boiling point? C

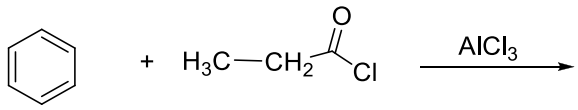
A) 

B) 

C) 

D) 

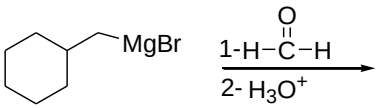
5- The product of the following reaction

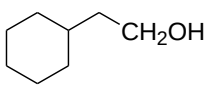


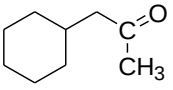
Is:

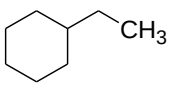
A) Acetophenone B) Ethylphenyl ketone C) Benzenepropanone D) Propiophenone

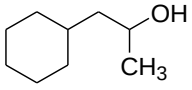
6-The following reaction gives: A



A) 

B) 

C) 

D) 

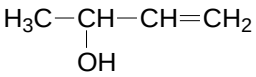
7. Addition of Grignard compound to acetone gives:

A) Primary alcohol
B) Secondary alcohol
C) Tertiary alcohol
D) Alkane

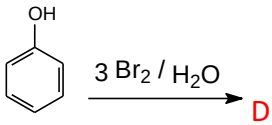
8. Addition of Amine to carbonyl group is:

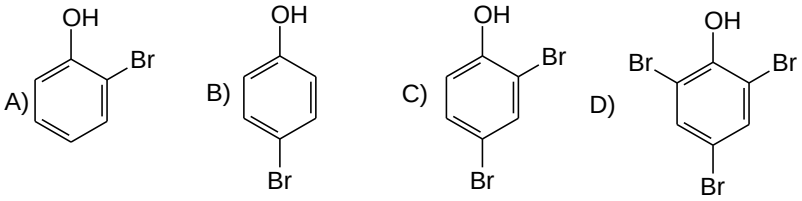
A) Elimination reaction
B) Electrophilic addition reaction
C) Nucleophilic Substitution reaction
D) Nucleophilic addition reaction

9. Choose the correct name of the following compound:

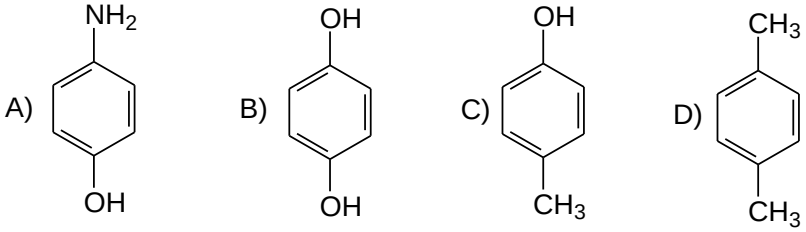


A) 3-Buten-2-ol
B) 2-Butanol
C) 1-Buten-3-ol
D) 2-Butyn-1-ol

10.The following reaction gives:  D

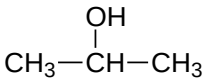


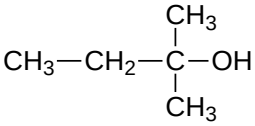
11. The structural formula of p-cresol is: C



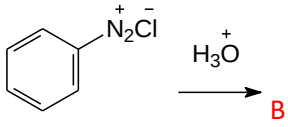
12. The most acidic alcohol is: D

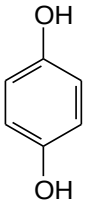
A) CH_3-CH_2-CH_2—OH

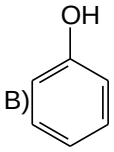
B) 

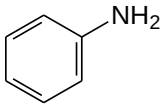
C) 

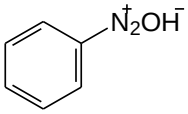
D) F_3C—CH_2-OH

13. Following reaction gives: 

A) 

B) 

C) 

D) 

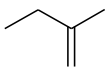
14. Which of following reagent oxidize primary alcohol to aldehyde:

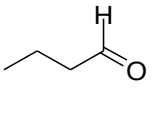
A) $NaBH_4$
B) $LiAlH_4$
C) CrO_3
D) $KMnO_4$

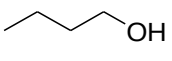
15. Ozonolysis of 2-methyl-2-butene gives:

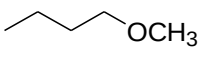
A) Acetone
B) Acetone and acetaldehyde
C) Acetaldehyde and propanal
D) Acetaldehyde

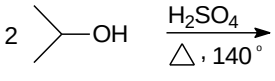
16- Which of following compounds is more reactive towards nucleophile addition? B

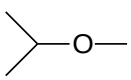
A) 

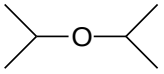
B) 

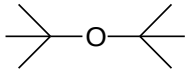
C) 

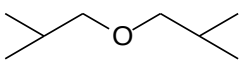
D) 

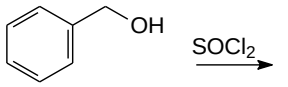
17. The product of the following reaction : 

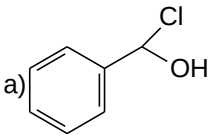
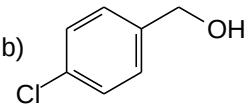
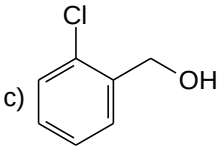
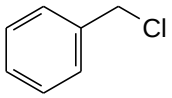
a) 

b) 

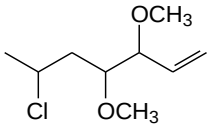
c) 

d) 

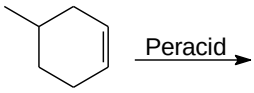
18- The product of the following reaction :  D

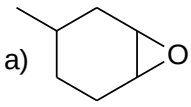
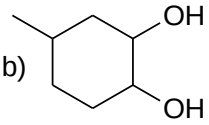
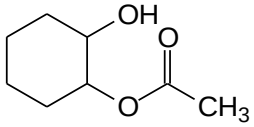
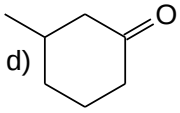
a) 
b) 
c) 
d) 

19. Choose the correct name of the following compound:

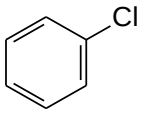
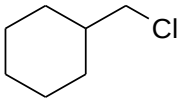
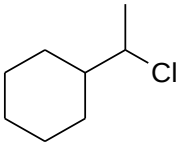


A) 2-Chloro-4,5-6-heptene
B) 6-Chloro-3,4-dimethyl-1-heptene
C) 3,4-Dimethyl-6-chloro-6-heptene
D) 6-Chloro-3,4-dimethoxy-1-heptene

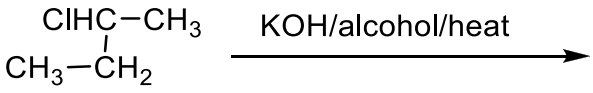
20. The product of the following reaction :  A

a) 
b) 
c) 
d) 

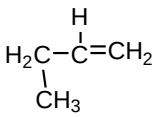
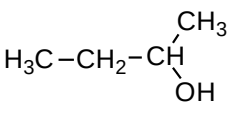
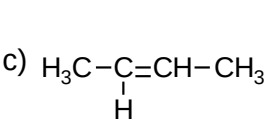
21. Which of the following compounds is known as secondary alkyl halide? C

a) 
b) 
c) 
d) CH_3CH_2Cl

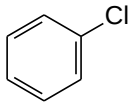
22. The major product of the following reaction is:

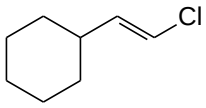


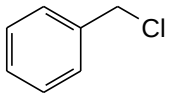
C

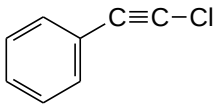
a) 
b) 
c) 
d) $CH_3-CH_2-CHK-CH_3$

23. Which of the following is called benzyl chloride? C

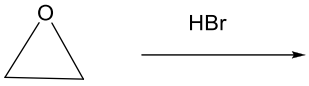
a) 

b) 

c) 

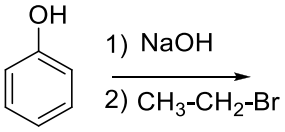
d) 

24. The following reaction gives



A) 2-bromoethanol B) Ethanol C) Ethane D) Bromoethane

25.The following reaction gives:



A) 4-Ethylphenol
B) 2-Ethylphenol
C) Ethylphenyl ether
D) Ethylphenyl ketone

King Saud University (The Preparatory Year)

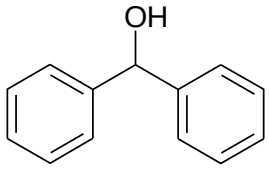
Chem.: 145	**Midterm II ***	**Time: 1 hour**

Name: ---------- St. No. (----------)

Group NO. (----------) Serial No.(----------)

I) for the following questions choose the correct name according to IUPAC rules:

1-



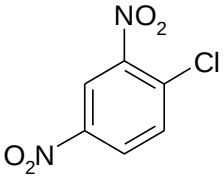
a) Diphenylmethanol.

b) Benzyl phenol.

c) Dibenzyl methanol.

d) Benzyl phenyl alcohol.

2-



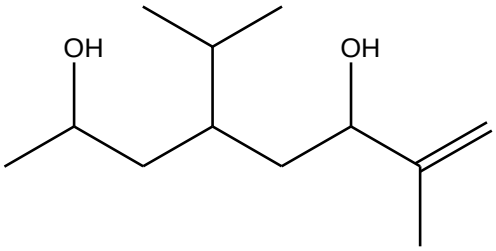
a) 1-Chloro-2,4-diaminobenzene.

b) 1,3-Dinitro-4-chlorobenzene.

c) 1-Chloro-2,4-dinitrobenzene.

d) 1,3-Diamino-4-chlorobenzene.

3-



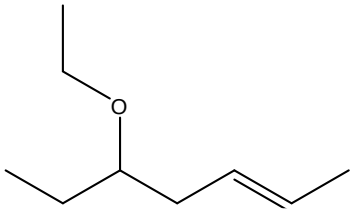
a) 5-Isopropyl-2-methyl-1-octen-3,7-diol.

b) 3-Isopropyl-1,6-dimethyl-6-hepten-1,5-diol.

c) 4-Isopropyl-7-methyl-7-octen-2,6-diol.

d) 3,5-Diisopropyl-1-methylpentan-1,5-diol.

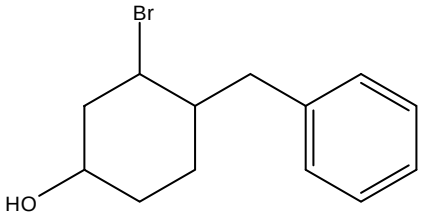
4-



a) 5-Ethoxy-2-heptene. b) Ethyl heptyl ether.

c) 3-Ethoxy-5-heptene. d) Heptenyloxyethane.

5-



a) 1-Bromo-3-hydroxy-6-phenylcyclohexane. b) 1-Phenyl-2-bromo-4-cyclohexanol.

c) 1-Benzyl-2-bromo-4-hydroxycyclohexane. **d) 4-Benzyl-3-bromocyclohexanol.**

II) For the following questions choose the best answer

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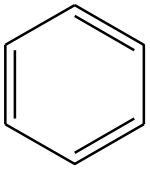
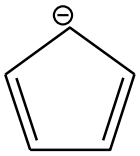
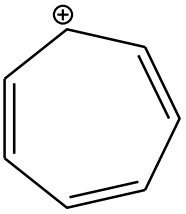
6. Which of the following is ***not*** aromatic?

a) 

b) 

c) 

d) 

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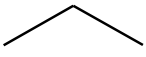
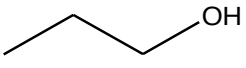
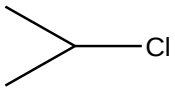
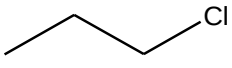
7. Which of the following compounds has the highest boiling point?

a) 

b) 

c) 

d) 

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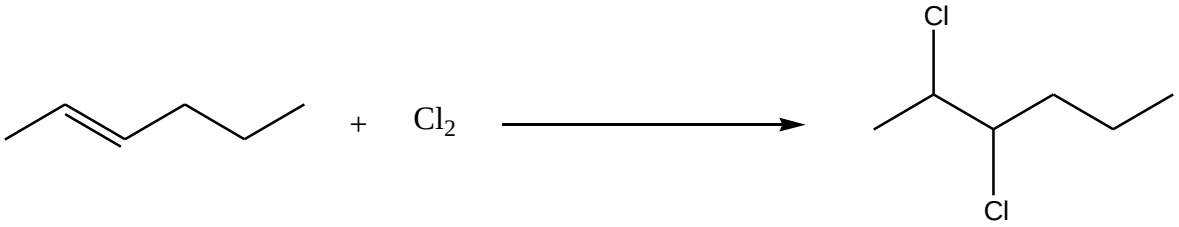
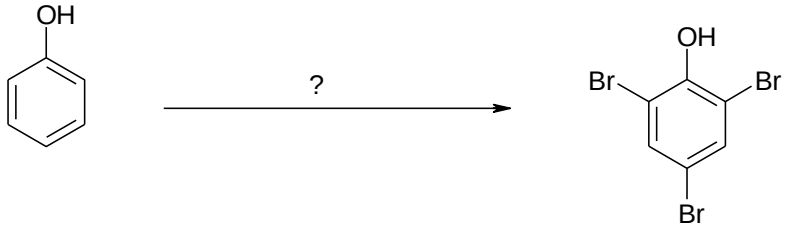
8. What are the correct conditions for this reaction?



a) CCl_4 b) UV light c) Heat d) $FeCl_3$

---

9. What are the right reagents and conditions for this reaction?



a) Br_2 / $FeBr_3$ b) Br_2 / $AlCl_3$ c) Br_2 / CCl_4 **d) Br_2 / H_2O**

---

10. How much is the resonance energy of benzene ring?

a) 36 Kcal. b) 76 Kcal. c) 46 Kcal. d) 56 Kcal.

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11. Which of the following compounds is the least soluble in water?

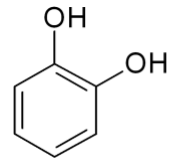
a) Propanetriol b) Propanol

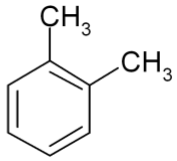
c) Phenol. d) Propanediol

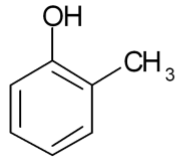
III) For the following structures choose the Common name:

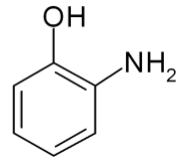
---

12. Which of the following is o-Cresol?

a) 

b) 

c) 

d) 

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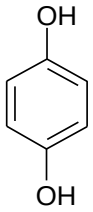
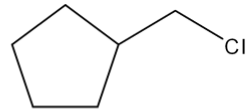
13. What is the common name of the following structure?



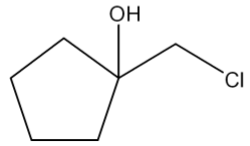
a) Catechol. b) Resorcinol. c) Pyrogallol. **d) Hydroquinone.**

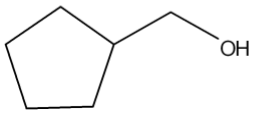
IV) For the following questions choose the major or the main product

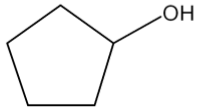
14.

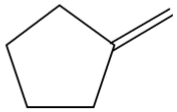


dil. KOH

a) 

b) 

c) 

d) 

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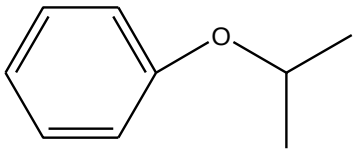
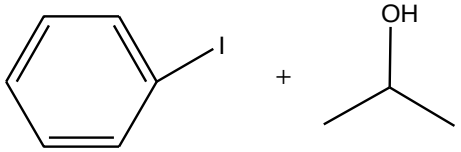
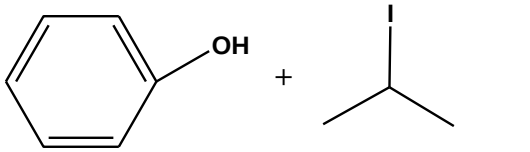
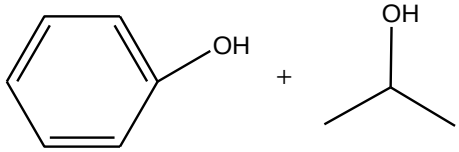
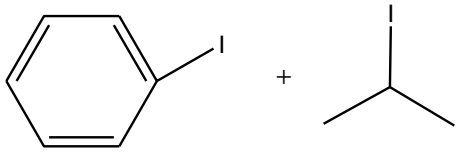


HI / H_2O / Heat

a) 

b) 

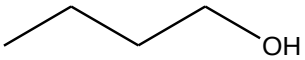
c) 

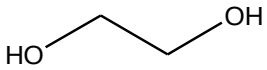
d) 

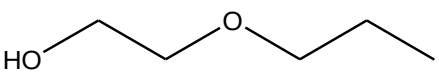
16.

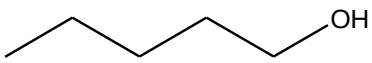
i) $CH_3CH_2CH_2MgBr$

ii) $\overset{\oplus}{H_3O}$

a) 

b) 

c) 

d) 

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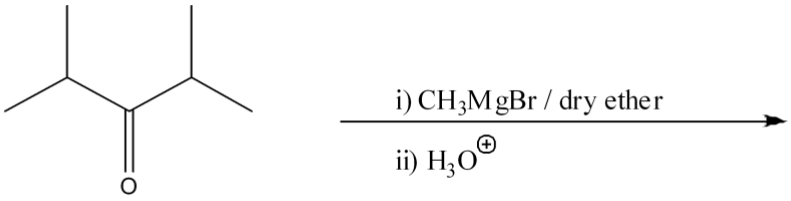
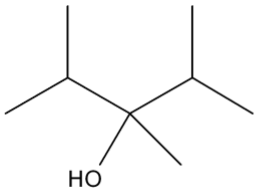
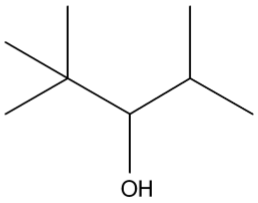
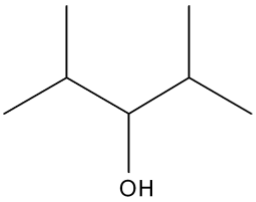
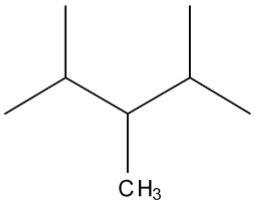


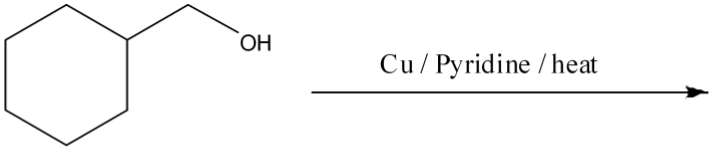
a) 

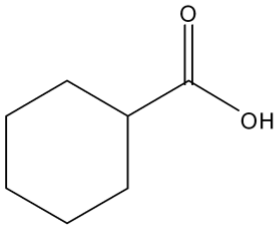
b) 

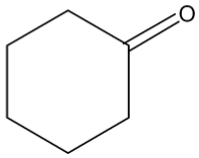
c) 

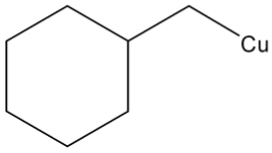
d) 

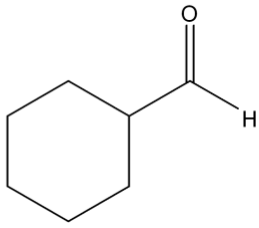
18.



a) 

b) 

c) 

d) 

19.

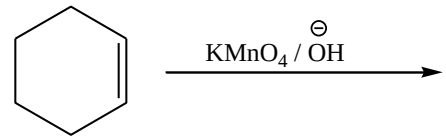
a) $CH_3CH_2OCH_3$

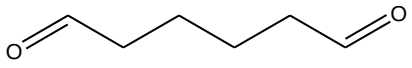
b) 

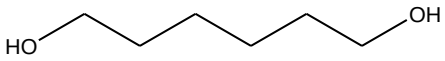
c) 

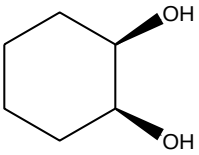
d) $CH_3CH_2COCH_3$

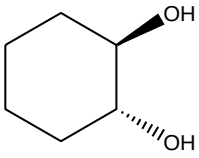
20.



a) 

b) 

c) 

d) 

Bonus Questions:

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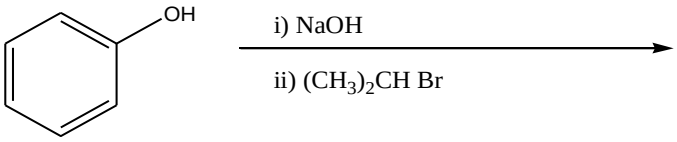
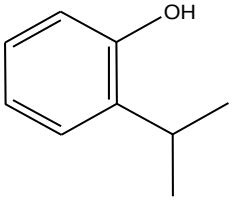
1. A C_8H_{10} hydrocarbon is nitrated by HNO_3 and sulfuric acid. Two $C_8H_9NO_2$ isomers are obtained. Which of the following fits this evidence?

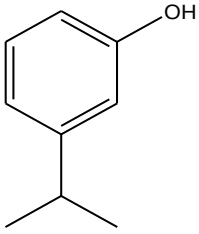
a) *para*-xylene. b) *ortho*-xylene. c) *meta*-xylene. **d) Ethylbenzene.**

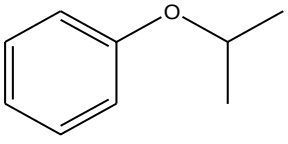
---

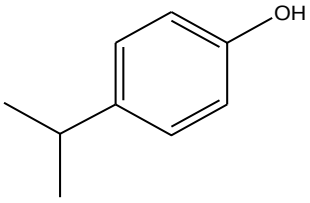
2. What is the major product of this 2 step reaction?



a) 

b) 

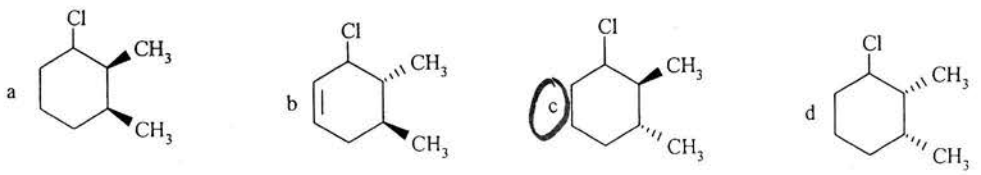
c) 

d) 

Best Wishes

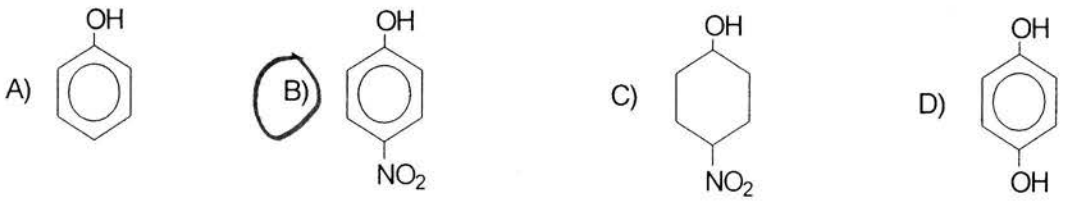
Dr. Nahed Elsayed, Dr. Siham Lahsasni, Dr. Noha Elnagdi

5- أي من المركبات التالية يمثل *trans*-1-Chloro-2,3,-dimethylcyclohexane :

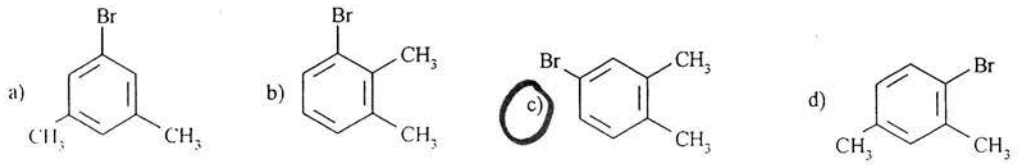


6- المركب الأكثر ذوبانا في الماء هو:

7- المركب الأكثر حمضية هو:



8- الصيغة البنائية للمركب 4-Bromo-1,2-Dimethylbenzene هي:



9- الصيغة البنائية لمركب 2-Methoxybutane هي:

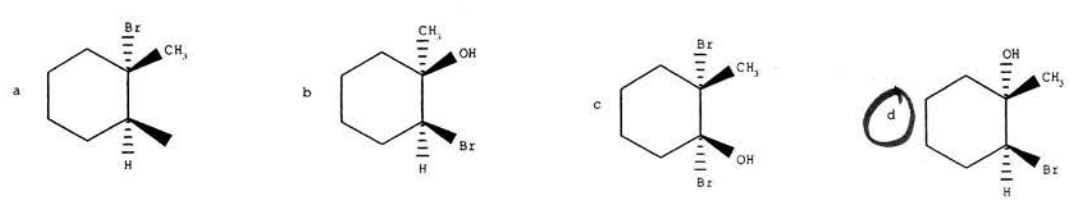
a) $CH_3CH_2\ OCH_2\ CH_2\ CH_3$

b) $CH_3\ OCH_2\ CH_2\ CH\ _2CH_3$

c) $CH_3\ CH_2\ OCHCH(CH_3)_2$

d) $CH_3\ OCH\ (CH_3\ )CH_2\ CH_3$

10- عند معاملة 1-Methycyclohexene بـ $\mathbf{Br_2/H\ _2O}$ فإن الناتج هو:



cis

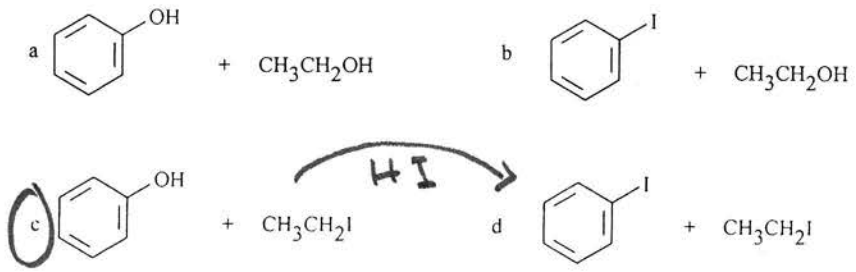
trans

بسم الله الرحمن الرحيم

جامعة الملك سعـــود	**الاختبار الفصلي الثاني في المـــقـــرر 106 كيم**	رقم الحضور:
كلية الـعـلـــوم	الفصل الثاني 1428-1429 هـ	رقم الطالب:
قـســم الكيميـاء	الزمن : ساعة ونصف	اسم الطالب:

س1: ضع دائرة حول رقم الفقرة الصحيحة فقط فيما يلي: **15 درجة**

1- يؤدي تفاعل Ethoxybenzene مع HI في وجود حرارة إلى تكون:



2- التفاعلات الرئيسة لمركب Cyclohexanone هي تفاعلات:

أ- أكسدة واختزال

ب- إضافة نيكلوفيلية

ج- إضافة الكتروفيلية

د- استبدال نيكلوفيلية

3- أي من المركبات التالية يعتبر هاليد ألكيلي :

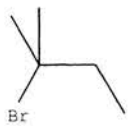
4- ناتج إضافة الماء إلى $PhCH_2MgBr$ هو:

a) Benzyl alcohol

b) Toluene

c) Benzoic acid

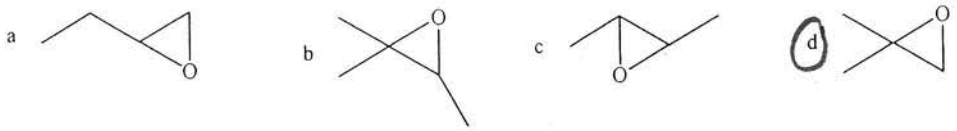
d) Methyl phenol

11- الاسم النظامي IUPACالمركب  هو:

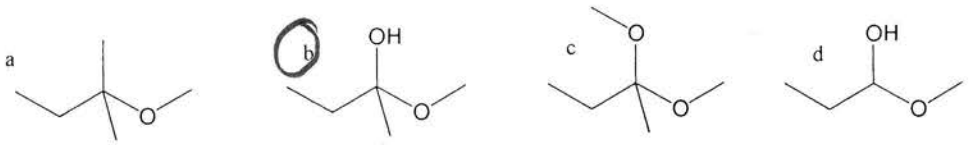
a) 2-Methyl-1-bromobutane
b) 1-Bromopentane
b) 3-Methyl-3-bromobutane
d) 2-bromo-2-Methylbutane

ethylen oxide

12- الصيغة البنائية لمركب 2,2-Dimethylepoxide هي:

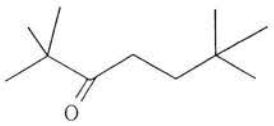


13- مركب hemiketal هو الذي له الصيغة البنائية:



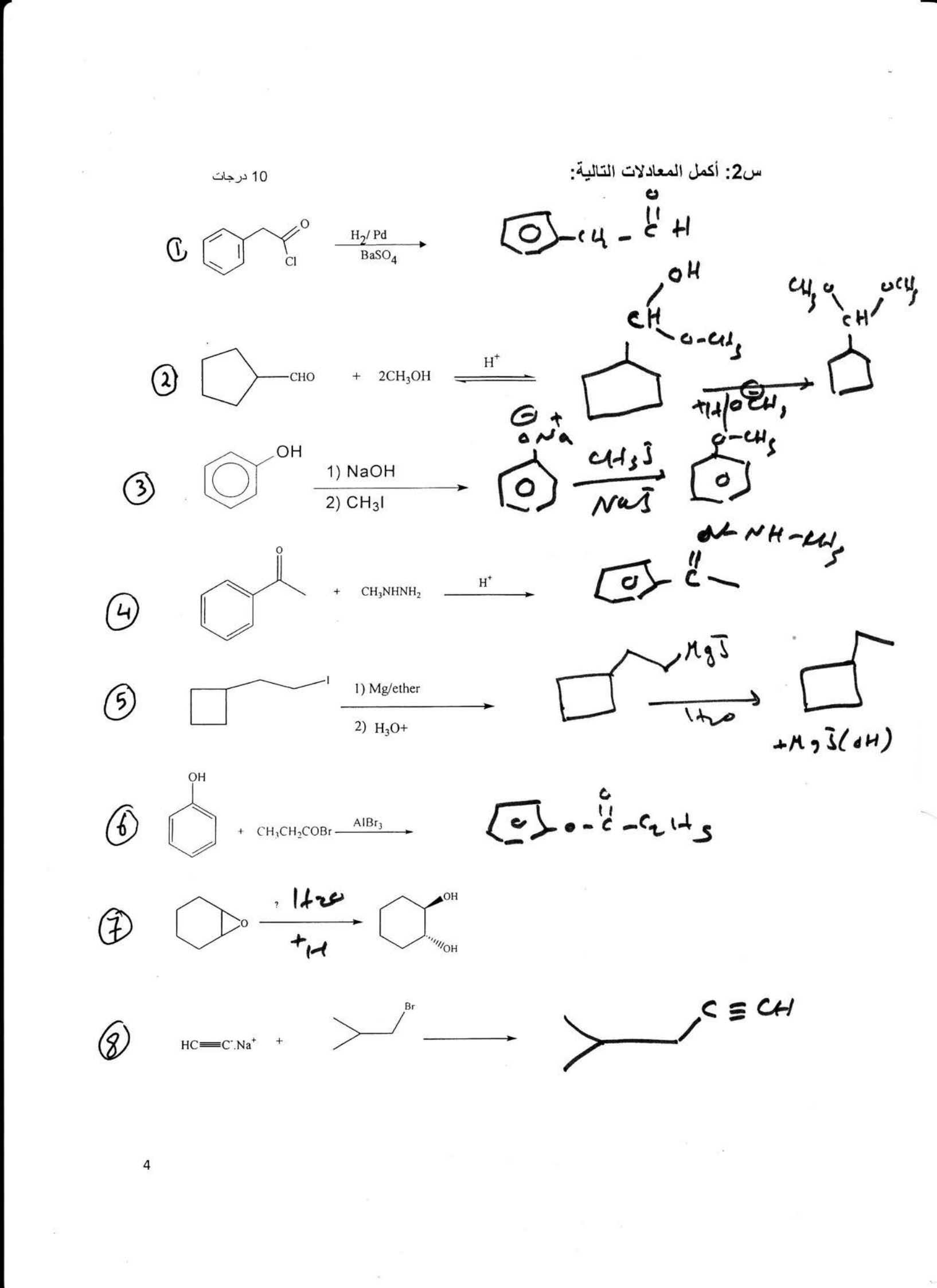
14- يتكون الأكسيم Oxime من تفاعل:

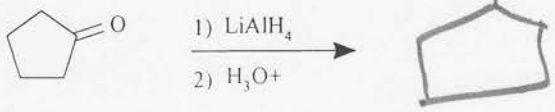
a) Ketone + Methylamine
b) Aldehyde + Hydroxylamine
C) NH_3 + Aldehyde
d) Aldehyde + 2-propanol

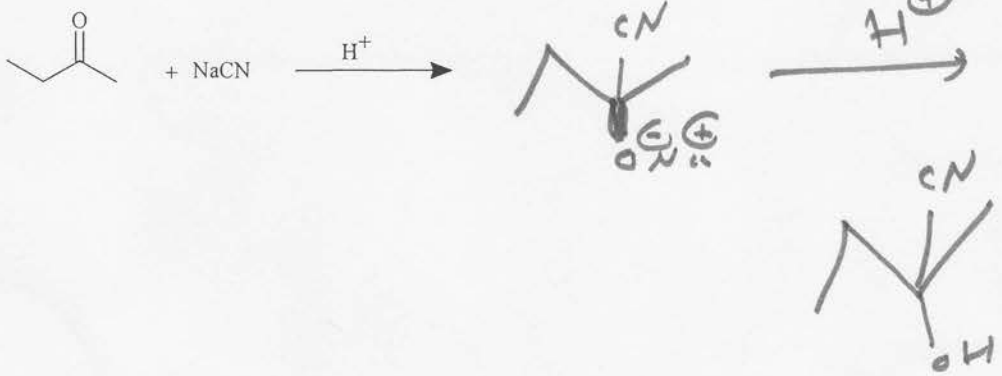
15- الاسم النظامي (IUPAC) للمركب  هو:

a) 2,2,3,-Trimethyl-3-octanone
b) 2,2,6,6-tetramethyl-3-heptanone
b) 2,2,6,6-trimethyl-3-heptanal
d) t-Butyl-1-heptanone

س2: أكمل المعادلات التالية: 10 درجات



(9) 

(10) 

King Saud University (The Preparatory Year)

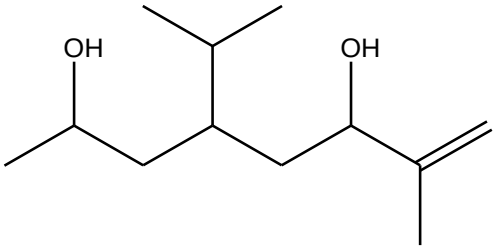
Chem.: 145 Midterm II # Time: 1 hour

Name: ---------- St. No. (----------)

Group NO. (----------) Serial No.(----------)

I) for the following questions choose the correct name according to IUPAC rules:

1-



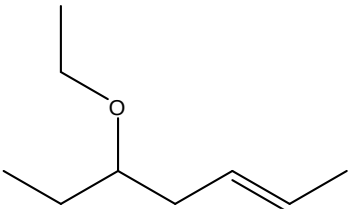
a) 5-Isopropyl-2-methyl-1-octen-3,7-diol.

b) 4-Isopropyl-7-methyl-7-octen-2,6-diol.

c) 3-Isopropyl-1,6-dimethyl-6-hepten-1,5-diol.

d) 3,5-Diisopropyl-1-methylpentan-1,5-diol.

2-



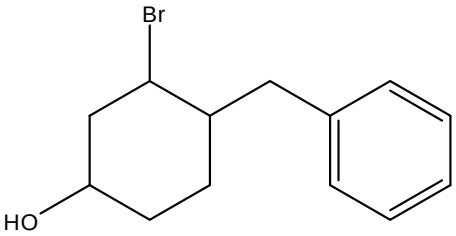
a) 5-Ethoxy-2-heptene.

b) 3-Ethoxy-5-heptene.

c) Ethyl heptyl ether.

d) Heptenyloxyethane.

3-

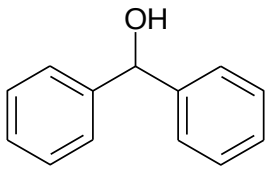


a) 1-Bromo-3-hydroxy-6-phenylcyclohexane.

b) 1-Phenyl-2-bromo-4-cyclohexanol.

c) 4-Benzyl-3-bromocyclohexanol.

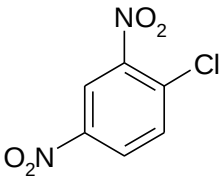
d) 1-Benzyl-2-bromo-4-hydroxycyclohexane.


OH

4-

a) Benzyl phenyl alcohol.
b) Benzyl phenol.
c) Dibenzyl methanol.
d) Diphenylmethanol.

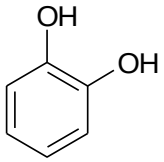
5-

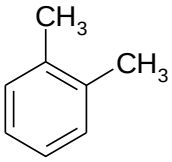


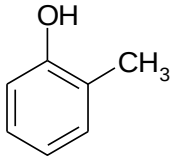
a) 1-Chloro-2,4-dinitrobenzene.
b) 1,3-Dinitro-4-chlorobenzene.
c) 1-Chloro-2,4-diaminobenzene.
d) 1,3-Diamino-4-chlorobenzene.

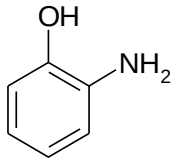
II) For the following structures choose the Common name:

6- Which of the following is o-Cresol? **C**

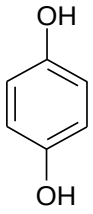
a) 

b) 

c) 

d) 

7- What is the common name of the following structure?

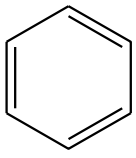


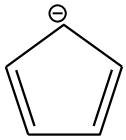
a) Hydroquinone.
b) Resorcinol.
c) Catechol.
d) Pyrogallol.

III) For the following questions choose the best answer

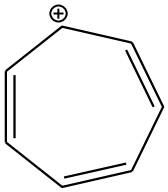
---

8. Which of the following is ***not*** aromatic? **c**

a) 

b) 

c) 

d) 

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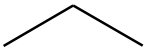
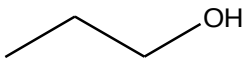
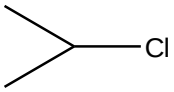
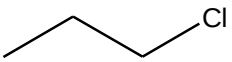
9. Which of the following compounds has the highest boiling point? **b**

a)  b) 

c) 

d) 

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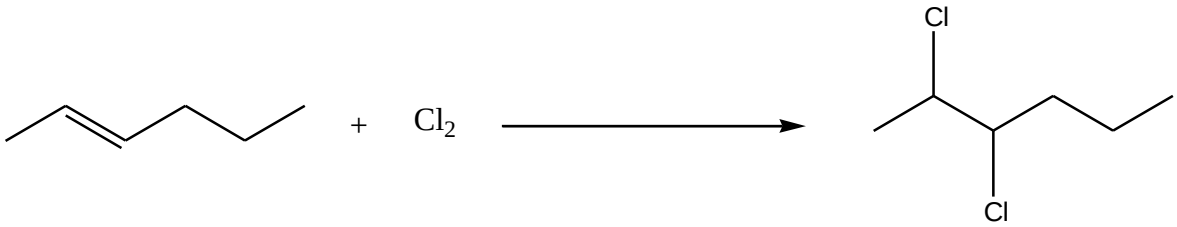
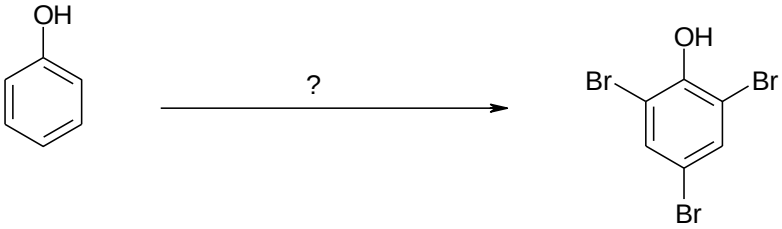
10. What are the correct conditions for this reaction? **a**



a) CCl_4 b) UV light c) Heat d) $FeCl_3$

---

11. What are the right reagents and conditions for this reaction?



a) Br_2 / $FeBr_3$ **b) Br_2 / H_2O** c) Br_2 / CCl_4 d) Br_2 / $AlCl_3$

---

12. How much is the resonance energy of benzene ring?

a) 76 Kcal. B) 46 Kcal. **c) 36 Kcal.** d) 56 Kcal.

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13. Which of the following compounds is the least soluble in water?

a) Phenol b) Propanol

c) Propanetriol d) Propanediol

IV) For the following questions choose the major or the main product

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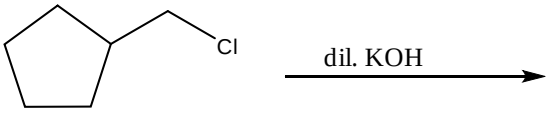
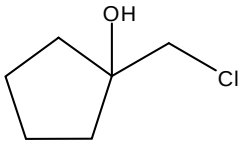
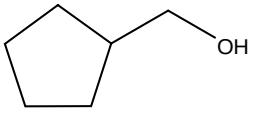
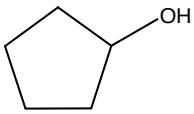
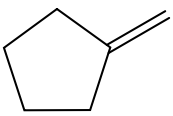
14. **b**



a) 

b) 

c) 

d) 

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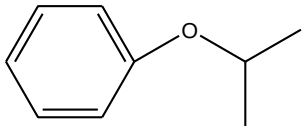
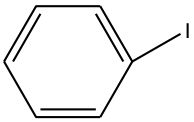
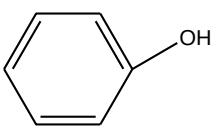
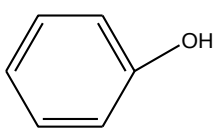
15. **b**

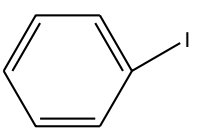


$HI / H_2O / Heat$

a) 

b) 

c) 

d) 

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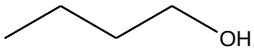
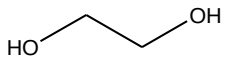
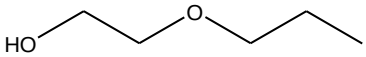
16. **d**

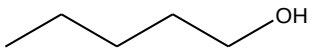
i) $CH_3CH_2CH_2MgBr$

ii) $\overset{\oplus}{H_3O}$

a) 

b) 

c) 

d) 

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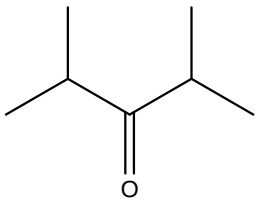
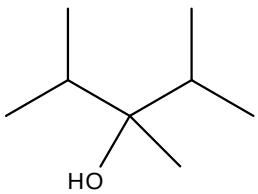
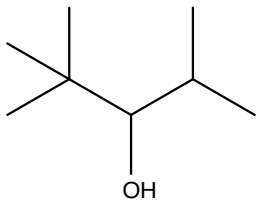
17. **a**

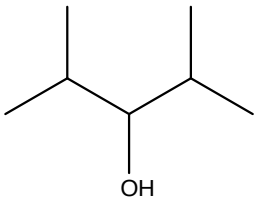


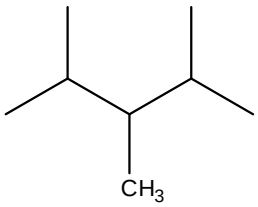
i) CH_3MgBr / dry ether

ii) $H_3O^{\oplus}$

a) 

b) 

c) 

d) 

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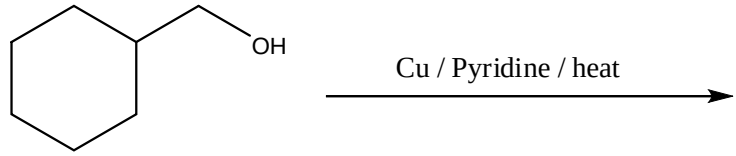
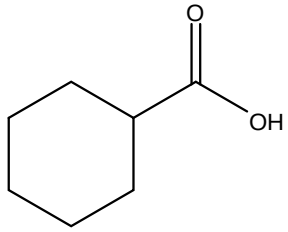
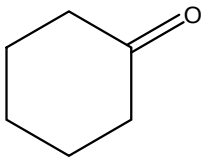
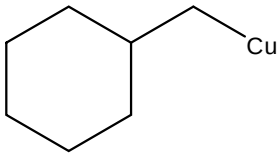
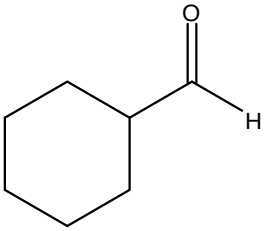
18. **d**



a) 

b) 

c) 

d) 

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19. **c**

a) $CH_3CH_2OCH_3$

b) 

c) 

d) $CH_3CH_2COCH_3$

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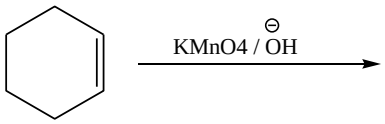
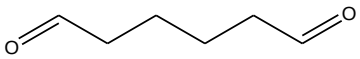
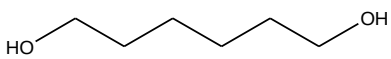
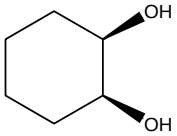
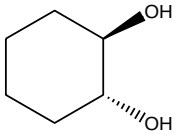
20. **c**



a) 

b) 

c) 

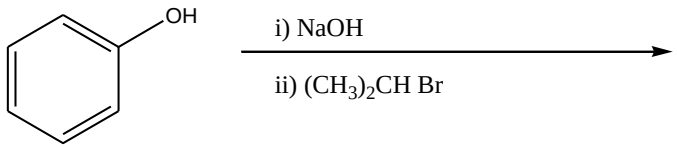
d) 

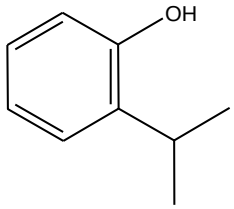
Bonus Questions:

1- A C_8H_{10} hydrocarbon is nitrated by HNO_3 and sulfuric acid. Two $C_8H_9NO_2$ isomers are obtained. Which of the following fits this evidence?

a) Ethylbenzene b) *ortho*-xylene c) *meta*-xylene d) *para*-xylene

2- What is the major product of this 2 step reaction? **c**



a)


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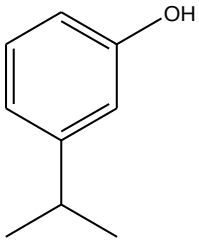

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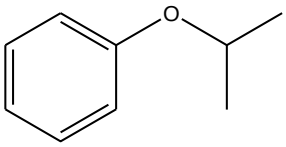

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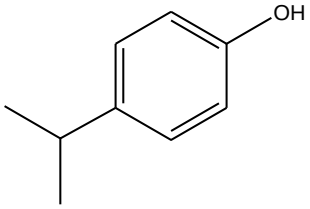


Best Wishes

Dr. Nahed Elsayed, Dr. Siham Lahsasni, Dr. Noha Elnagdi

جامعة الملك سعود - كلية العلوم – قسم الكيمياء

الاختبار الفصلى الثانى في مقرر ١٤٥ كيم (١٠-٦-١٤٣١هـ)

الزمن: ٩٠ دقيقة

أسم الطالب: **رقم الطالب:**

نموذج الأجابة:

ملاحظة هامة: تصحيح الإمتحان سيكون بناء علي الأجابة المكتوبة فى الجدول أسفل (حرف الإجابة الصحيحة) ولن ينظر الى بقية الأوراق والتي تعتبر مسودة .

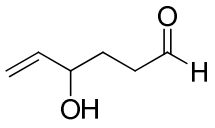
رقم السؤال	الإجابة	رقم السؤال	الإجابة
1		16	
2		17	
3		18	
4		19	
5		20	
6		21	
7		22	
8		23	
9		24	
10		25	
11		26	
12		27	
13		28	
14		29	
15		30	

جامعة الملك سعود - كلية العلوم – قسم الكيمياء

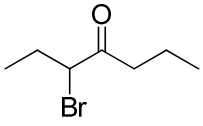
الاختبار الفصلى الثانى في مقرر ١٤٥ كيم (١٠-٦-١٤٣١هـ)

الزمن: ٩٠ دقيقة

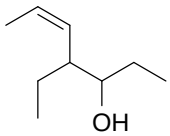
أسم الطالب: **رقم الطالب:**

1- The correct name of the following compound  is

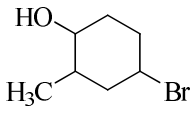
A) 3-hydroxyhexanal
B) 3-hydroxy-4-hexenal
C) 4-hydroxy-5-hexenal
D) 3-hydroxy-1-hexenal

2- The IUPAC name of  is:

A) 3-bromo-4-heptanone
B) 5-bromo-4-heptanone
C) 3-bromo heptanone
D) 4-bromo-3-heptanone

3- The IUPAC name of  is:

a) 4-Ethyl-5-heptyn-3-ol
b) 4-Ethyl-5-heptan-3-ol
c) 4-Ethyl-5-hepten-3-ol
d) 4-Ethyl-2-hepten-5-ol

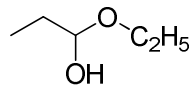
4- The IUPAC name of  is:

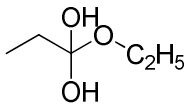
a) 3-Methyl-1-bromocyclohexanol
b) 2-Bromo-3-methylcyclohexanol
c) 4-Bromo-2-methylcyclohexanol
d) 3-Bromo-1-methylcyclohexanol

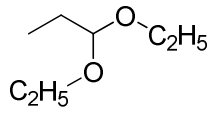
5- Addition of Grignard Reagent (RMgX) to ketone gives

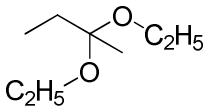
A) Primary alcohol
B) Secondary alcohol
C) Tertiary alcohol
D) Carboxylic acid

6- The structure of Acetal is:

A) 

B) 

C) 

D) 

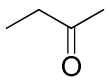
7- Reaction of phenyhydrazine with aldyhydes or ketones gives:

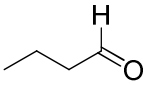
A) Oxime B) Phenylhydrazone C) Imine D) Hemiacetal

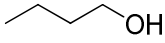
8- The common name of 2-methyl-2-propanol is:

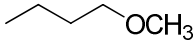
A) Allyl alcohol
B) Isopropyl alcohol
C) *tert*-Butyl alcohol
D) Benzyl alcohol

9- Which of the following compounds has the highest boiling point?

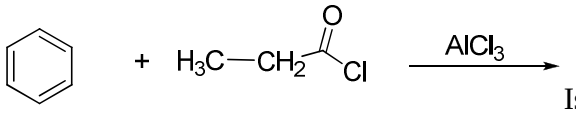
A) 

B) 

C) 

D) 

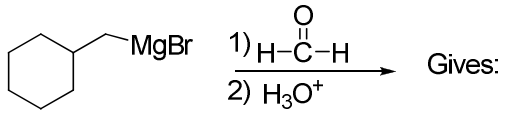
10- The product of the following reaction

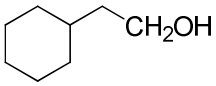


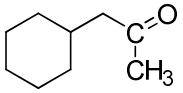
Is:

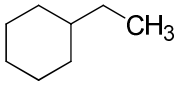
A) Acetophenone
B) Ethylphenyl ketone
C) Ethylbenzene
D) Phenylpropyl ketone

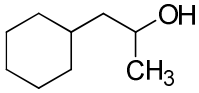
11- The following reaction gives



A) 

B) 

C) 

D) 

12- What is the structural formula of **A** in the following Reaction?

A $\xrightarrow{O_3/Zn/H_2O}$ $CH_3\text{-}CH_2\text{-}C(=O)H$ + $CH_3\text{-}C(=O)\text{-}CH_3$

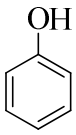
a) $CH_3\text{-}CH_2\text{-}CH{=}CH\text{-}CH_3$

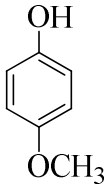
b) $CH_3\text{-}CH_2\text{-}C(CH_3){=}C(CH_3)\text{-}CH_2\text{-}CH_3$

c) $CH_3\text{-}CH_2\text{-}C(CH_3){=}C(CH_3)\text{-}CH_3$

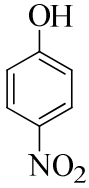
d) $CH_3\text{-}CH_2\text{-}CH{=}C(CH_3)\text{-}CH_3$

13- The most acidic compound is:

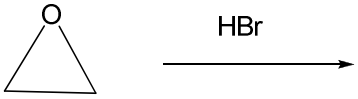
A) 

B) 

C) CH_3CH_2OH

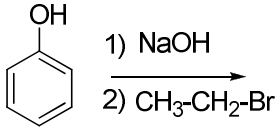
D) 

14- The following reaction gives



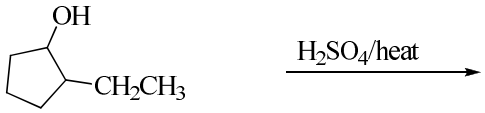
A) 2-bromoethanol B) Ethanol C) Ethane D) Bromoethane

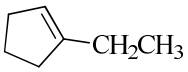
15- The following reaction gives:

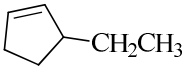


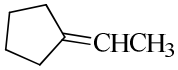
A) 4-Ethylphenol
B) 2-Ethylphenol
C) Ethylphenyl ether
D) Ethylphenyl ketone

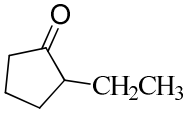
16- The main product from the following reaction is:

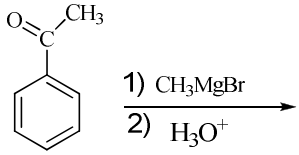


A) 

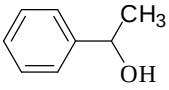
B) 

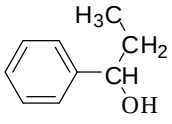
C) 

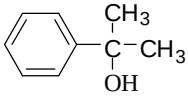
D) 

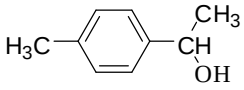
17- The following reaction 

gives:

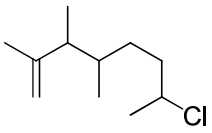
a) 

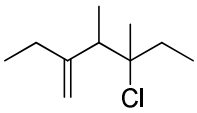
b) 

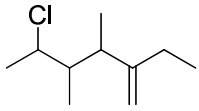
c) 

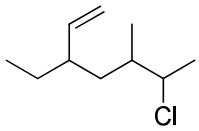
d) 

18- The structure of 5-Chloro-2-ethyl-3,4-dimethylhexene is:

A) 

B) 

C) 

D) 

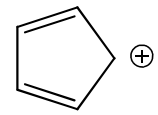
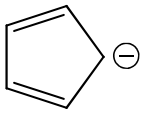
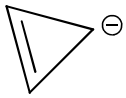
19- The reaction of Propyl bromide with NaOH is

A) Nucleophilic addition
B) Nucleophilic substitution
C) Electrophilic substitution
D) Electrophilic addition

20- Which of the following groups deactivate the benzene ring?

A) –OH B) –COOH C) $-NH_2$ D) $-OCH_3$

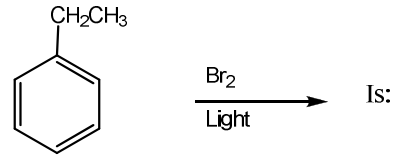
21- Which of the following compounds is aromatic?

A)  B)  C)  D) 

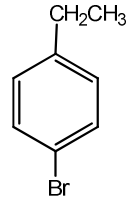
22- Bromination of the benzene ring is:

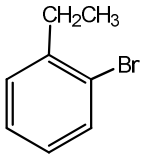
A) Electrophilic addition reaction..
B) Electrophilic substitution reaction.
C) Nucleophilic substitution reaction.
D) Nucleophilic addition reaction.

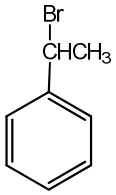
23- The main product of the following reaction

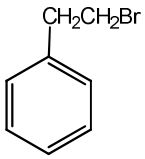


Is:

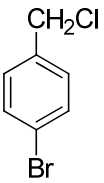
A) 

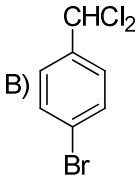
B) 

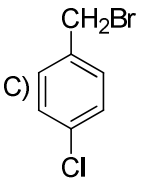
C) 

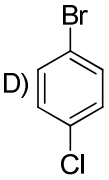
D) 

24- The structure of p-bromobenzylchloride is:

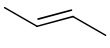
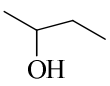
A) 

B) 

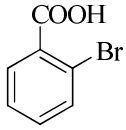
C) 

D) 

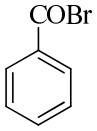
25- Which one of the following compounds undergoes the Electrophilic Substitution Reaction:

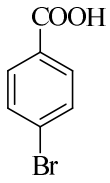
A)  B)  C)  D) 

26- Reaction of benzoic acid with $Br_2/AlBr_3$ gives:

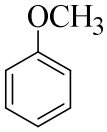
A) 

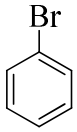
B) 

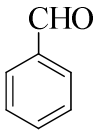
C) 

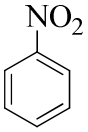
C) 

27- The most reactive compound towards sulphonation is

A) 

B) 

C) 

D) 

28- The most acidic alcohol is:

A) $CH_3CH_2CH_2$-OH

B) $CH_3\underset{\underset{OH}{|}}{C}HCH_3$

C) Cl_3C-CH_2-OH

D) $H_3C-\underset{\underset{OH}{|}}{\overset{\overset{CH_3}{|}}{C}}-CH_3$

29- The product of the following reaction is:

$$CH_3CH_2CH_2OH \xrightarrow{SOCl_2}$$

A) Propene

B) Dipropyl ether

C) 2-chloropropane

D) 1-chloropropane.

30- The product of the following reaction is:

$$CH_3\underset{\underset{CH_3}{|}}{C}HOCH_2CH_3 + 2\ HI\ (excess) \xrightarrow{Heat}$$

A) Ethanol and propanol
B) Ethyl iodide and water
C) Isopropyl iodide and water
D) Isopropyl iodide , ethyl iodide and water

King Saud University (The Preparatory Year)

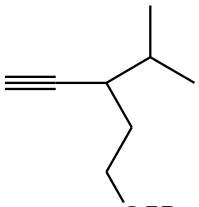
Chem.: 145	**Midterm 2**	**Time: 1 hour**

Name: ---------- St. No. (----------)

Group No. (----------) **Serial No. (----------)**

I) Choose the correct answer for the following:

1.The correct **IUPAC name** of the following compound



is:

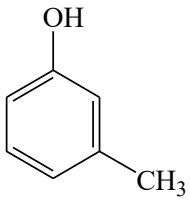
(a) 3-Acetylene-4-methyl-1-pentanol

(b) 3- Isopropyl-4-pentyn-1-ol

(c) 3-Ethynyl-4-methyl-1-pentanol

(d) 3- Isopropyl-1-pentyn-5-ol

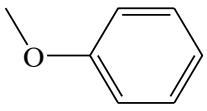
2.The **common name** of this compound

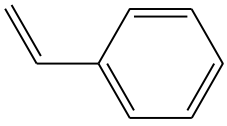


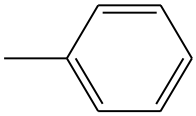
is:

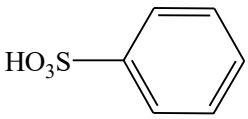
(a) m-Cresol (b) m-Xylene (c) Catechol (d) Resorcinol

3.Which of the following compound has **the common** name "**Styrene**"?

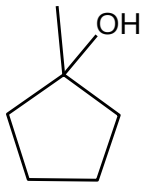
(a) 

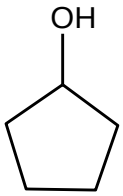
(b) 

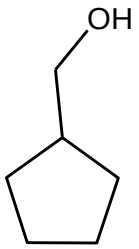
(c) 

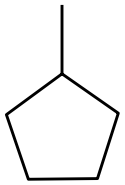
(d) 

4.Which of the following compounds would be oxidized to an aldehyde? **c**

(a) 

(b) 

(c) 

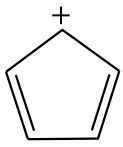
(d) 

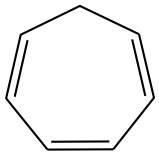
5.The addition of 2 equivalent of HBr to 1-pentyne gives……. as final product.

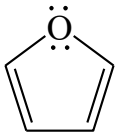
a) 1,2-Dibromopentane b) 2,2-Dibromopentane

c) 1-Bromopentene. d) 2-Bromopentene

6.Which of the following compound is aromatic? **c**

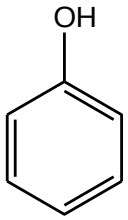
(a) 

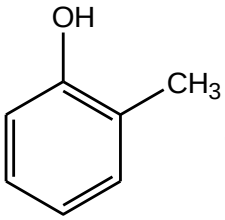
(b) 

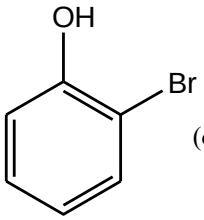
(c) 

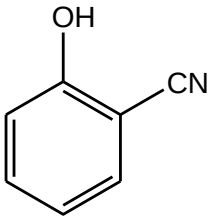
(d) 

7.Which one of the following **phenols** has **the highest acidity**? **d**

(a) 

(b) 

(c) 

(d) 

8.Which of the following compounds has the **lowest boiling point**? **a**

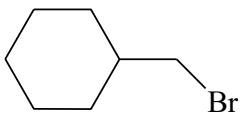
(a) Methanol (b) Ethanol (c) Propanol (d) Butanol

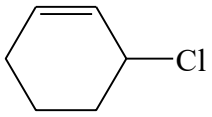
9.What is **the type of the reaction** between **methyl bromide** and **dil. KOH**?

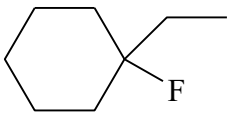
(a)Electrophilic substitution **(b)** Nucleophilic substitution

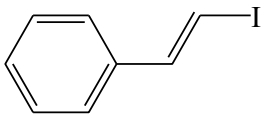
(c) Elimination (d) Addition

10.Which of these compounds is a **3º alkyl halide**?

(a) 

(b) 

(c) 

(d) 

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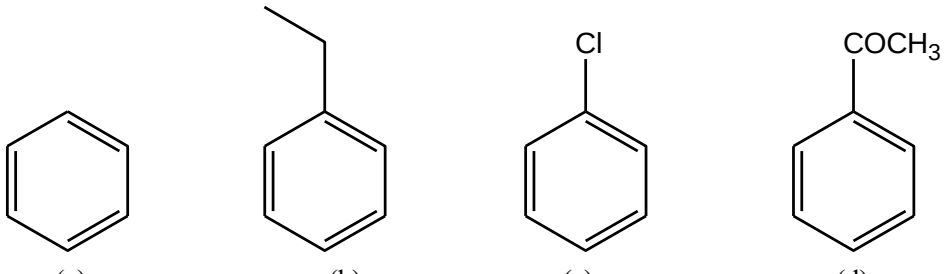
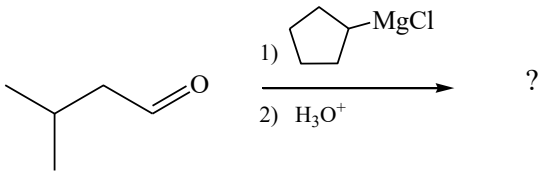
11. The least reactive compound of the following substituted benzene in electrophilic aromatic substitution is: **d**

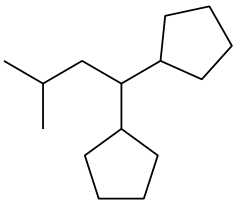


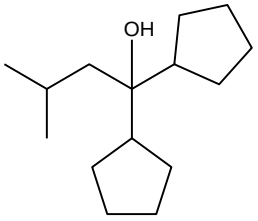
(a) (b) (c) (d)

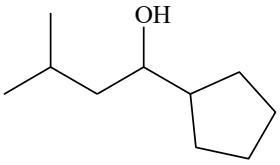
II) Choose the correct and the major product for the following reactions:

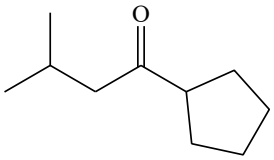
1.



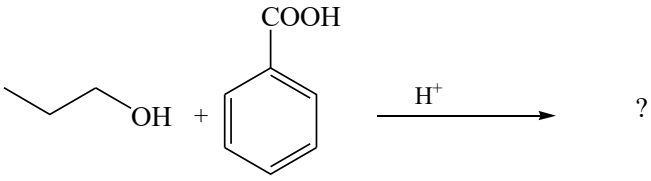
(a) 

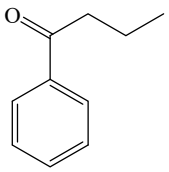
(b) 

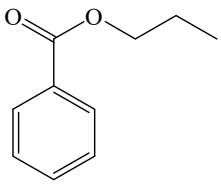
(c) 

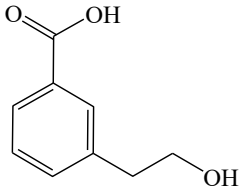
(d) 

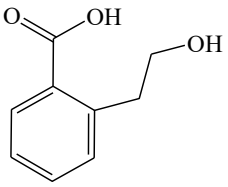
2.



(a) 

(b) 

(c) 

(d) 

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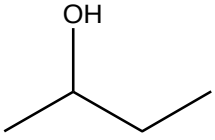
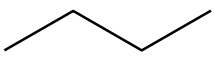
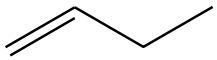
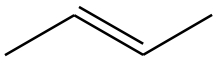
(a) 

(b) 

(c) 

(d) 

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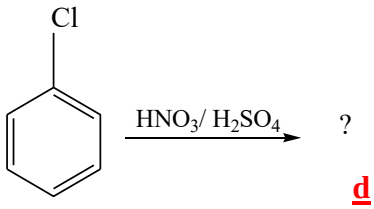
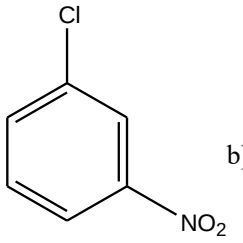
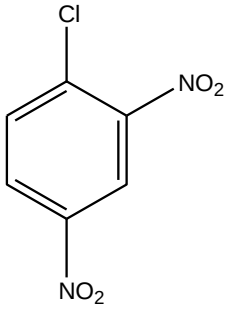
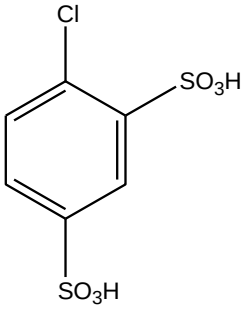
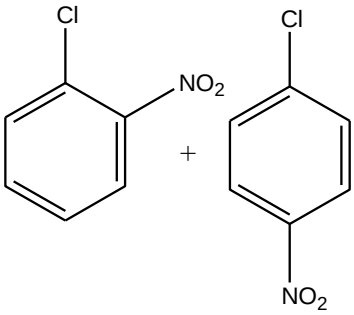


d

a) 

b) 

c) 

d) 

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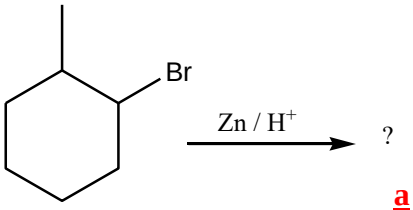
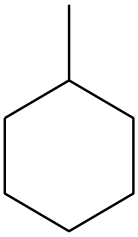
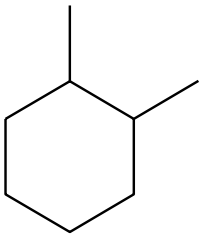
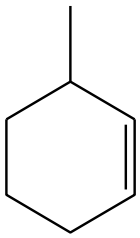
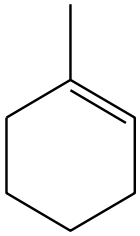


a

a) 

b) 

c) 

d) 

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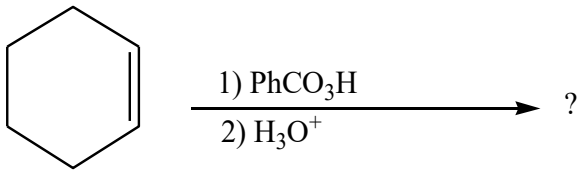
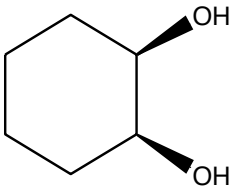
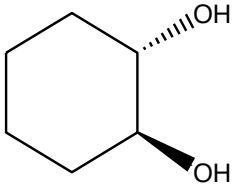
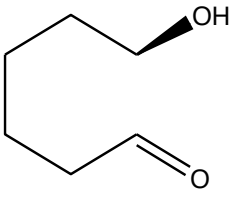
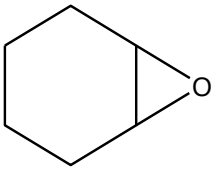
6. **b**



a) 

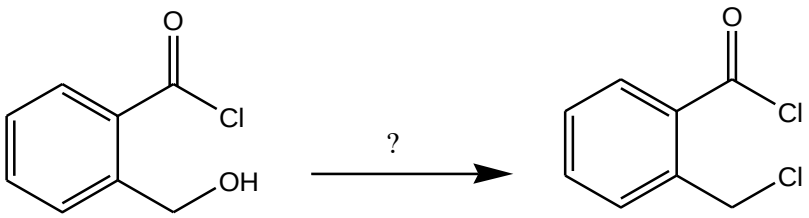
b) 

c) 

d) 

III) Select reagent that can best accomplish the following reaction:

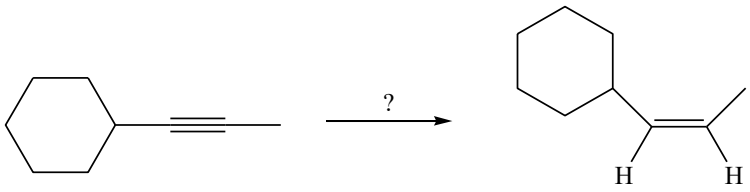
1.



(a) Cl_2/ CCl_4 (b) Cl_2 / UV light

(c) $SOCl_2$ (d) CH_3CH_2Cl/ $AlCl_3$

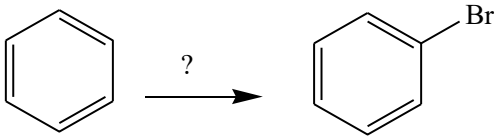
2.



(a) H_2/Na in Liq NH_3 **(b)** H_2/Pd ($BaSO_4$)

(c) H_2/Pt (d) $HgSO_4$/ H_2SO_4

3.



(a) Br_2, heat. (b) Br_2, CCl_4

(c) Br_2, $FeBr_3$ (d) CH_3Br, $AlBr_3$

Good Luck

Dr. Siham Lahsasni, Dr. Nahed Nasser El-Sayed, Dr. Shatha Alaqeel ,

and Dr. Seham Al Terary

هذا النموذج لي للنموذج الرقم ثم النموذج الآخر

جامعة الملك سعود - كلية العلوم – قسم الكيمياء

الاختبار الفصلي الثاني // مقرر 145 كيم - الفصل الدراسي الثاني (1437-1438هـ)

الزمن: ساعة ونصف **اسم الدكتور/**

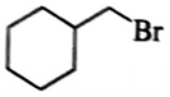
اسم الطالب: **رقم الطالب:**

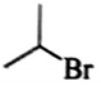
نموذج الإجابة

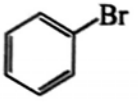
ملاحظة هامة: تصحيح الامتحان سيكون بناء علي الإجابة المكتوبة في الجدول أسفل (حرف الإجابة الصحيحة) ولن ينظر إلى بقية الأوراق والتي تعتبر مسودة.

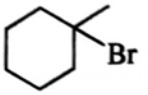
رقم السؤال	الإجابة	رقم السؤال	الإجابة
1	B	16	D
2	C	17	B
3	D	18	A
4	C	19	C
5	A	20	D
6	C	21	B
7	D	22	C
8	B	23	B
9	D	24	D
10	A	25	A
11	D	26	C
12	C	27	D
13	D	28	B
14	B	29	C
15	A	30	D

1) The structural formula of the tertiary alkyl bromide is _____

A) 

B) 

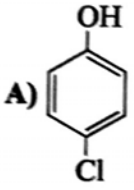
C) 

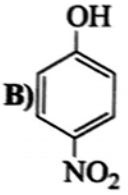
D) 

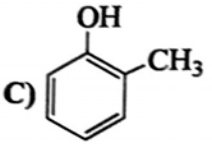
2) Glycols have _____ hydroxyl group(s).

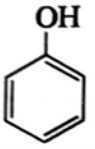
A) two **B)** one **C)** four **D)** three

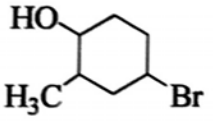
3) Among the following, which is the least acidic?

A) 

B) 

C) 

D) 

4) The IUPAC name of 

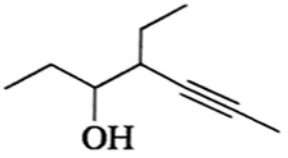
is _____

A) 1-Bromo-3-methylcyclohexanol **B)** 4-Bromo-2-methylcyclohexanol

C) 3-Bromo-1-methylcyclohexanol **D)** 2-Methyl-4-bromocyclohexanol

5) The compound with the highest boiling point is _____

A) CH_3Cl **B)** CH_3F **C)** CH_3Br **D)** CH_3I

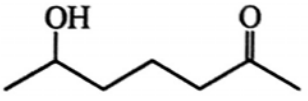
6) The IUPAC name of 

is _____

A) 4-Ethyl-2-heptyn-5-ol. **B)** 4-Ethyl-5-heptyn-3-ol.

C) 4-Ethyl-5-hexyn-2-ol. **D)** 4-Ethyl-2-hexyn-5-ol.

7) Choose the correct name of the following compound.



A) 2-Hydroxy-6-heptanone. **B)** 6-Hydroxy-2-octanone.

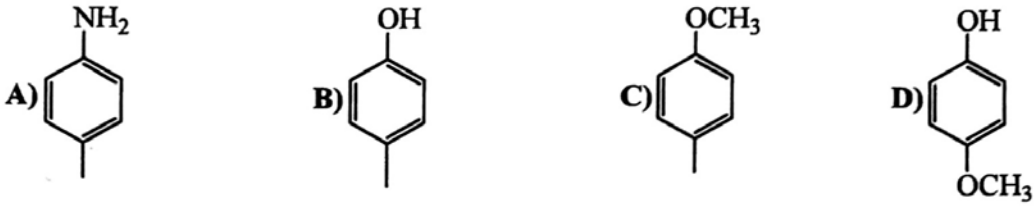
C) 6-Hydroxy-2-heptanone. **D)** 2-Hydroxy-6-octanone.

8) **The following reaction**  **gives_____**

A) 3-Bromo-2-butanol **B)** 2-Bromo-3-butanol.

C) 1-Bromo-2-butanol. **D).** 2-Bromobutanoxide.

9) **The structure of *p*-methyl anisole is _____**

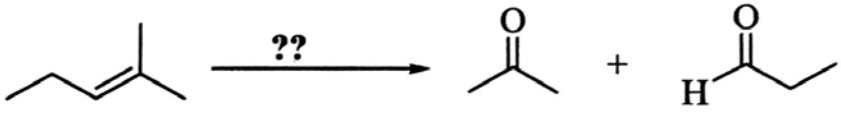


10) **The product of following reaction** $CH_3CH_2CH_2CH_2OH \xrightarrow{SOCl_2}$ **is _____**

A) 1,2-Dichlorobutane. **B)** Dibutylether.

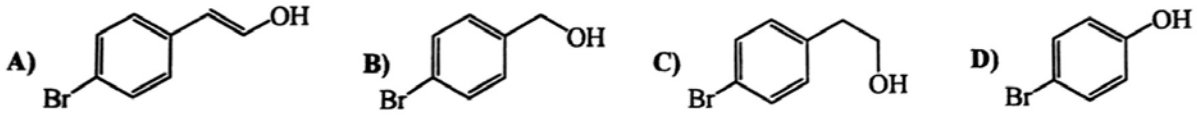
C) Butene. **D)** 1-Chlorobutane.

11) **What is the best reagent needed for the reaction below?**

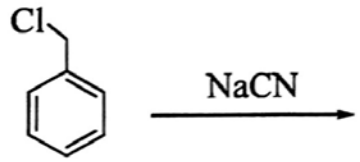


A) i) O_3, ii) Zn/ H_2O **B)** O_2/ Zn **C)** PCC **D)** $LiAlH_4$

12) **Which of the following is called *p*-bromobenzyl alcohol?**



13) **The product of the following reaction is _____**



14) The correct order of increasing boiling point is _____

A) Propane < Diethyl ether < ethanol
B) Ethanol < Diethyl ether< propane
C) Ethanol < propane < Diethyl ether
D) Diethyl ether < propane < ethanol

15) What are the products obtained when isopropyl methyl ether is reacted with excess HI?

A) $(H_3C)_2CH{-}OH + CH_3I$
B) $(H_3C)_2CH{-}I + H_2O$
C) $CH_3I + H_2O$
D) $(H_3C)_2CH{-}I + CH_3I + H_2O$

16) The following reaction  **yields _____**

A) *o*-Bromophenol
B) 2,4,6-Tribromophenol.
C) *m*-Bromophenol
D) 2,4-Dibromophenol

17) Which of the following alcohols would be oxidized to propanone?

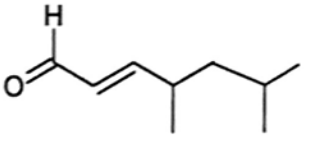
A) 2-propanol **B)** 2-methyl-2-propanol **C)** 1-butanol **D)** Ethanol

18) Among the following alkenes, which one produces tertiary butyl alcohol upon acid-catalyzed hydration?

A) $CH_3 - CH_2 - CH = CH_2$
B) $(CH_3)_2C = CH_2$
C) $CH_3 - CH = CH_2$
D) $CH_3 - CH = CH - CH_3$

19) Formation of diethyl ether from ethanol is based on a _____

A) hydrogenation reaction
B) oxidation reaction
C) dehydrogenation reaction
D) dehydration reaction

20) The correct IUPAC name of the following structure  **is ____**

A) 4,6-Dimethyl-2-heptenal
B) 5-Isopropyl-4-methyl-2-pentenal
C) 2,4-Dimethyl-7-heptenal
D) 2,4-Dimethyl-5-heptanal

21) Ether is more volatile than an alcohol having the same molecular formula. This is due to _____

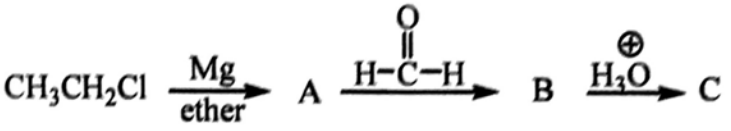
A) Hydrogen bonding in ethers

B) Alcohols having resonance structures

C) Hydrogen bonding in alcohols

D) Dipolar character of ethers

22) In the following sequence of reactions,



The compound 'C' is _____

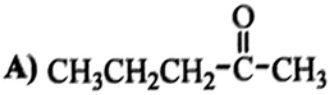
A) propanal

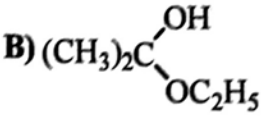
B) *n*-propyl alcohol

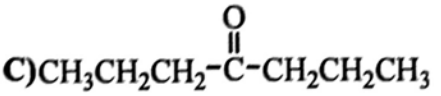
C) isopropyl alcohol

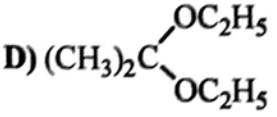
D) *n*-butyl alcohol

23) Treatment of Acetone with excess of ethanol in the presence of hydrochloric acid (H^+) yields _____

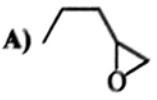
A) 

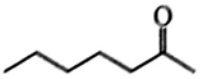
B) 

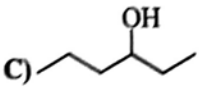
C) 

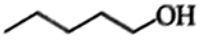
D) 

24) The following reaction  **gives _____**

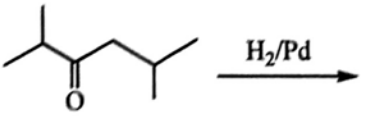
A) 

B) 

C) 

D) 

25) What is the product of the following reaction?



A) 2,5-Dimethyl-4-hexanol

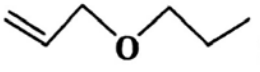
B) 2-Methylhexanal

C) 2,5-Dimethyl-3-hexanol

D) 2-Methylhexane

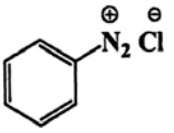
26) Bromoethane reacts with X to form diethyl ether. What is X?

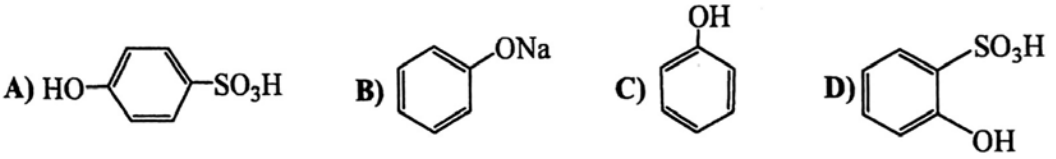
A) $Na_2S_2O_3$ **B)** H_2SO_4 **C)** NaOH **D)** C_2H_5ONa

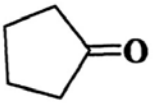
27) The common name for the following structure  **is _____**

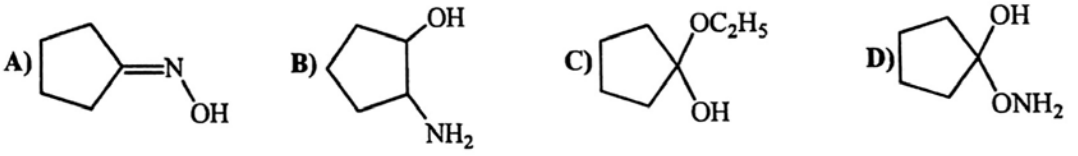
A) 3-Propoxypropene **B)** Allyl propyl ether

C) Vinyl propyl ether **D)** Allyl butyl ether

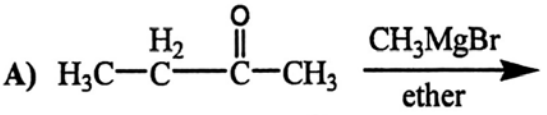
28) The following reaction  **gives _____**

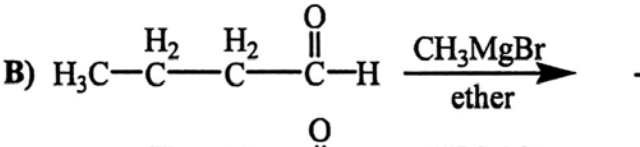


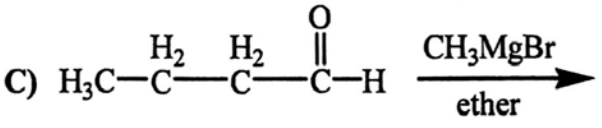
29) The product of the following reaction  **is _____**

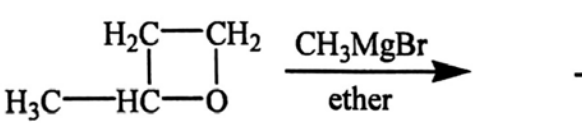


30) Which of the following reaction sequences would be the correct for the synthesis of 2-pentanone?

A)  2-pentanone

B)  2-pentanone

C)  2-pentanone

D)  2-pentanone

King Saud University (The Preparatory Year)

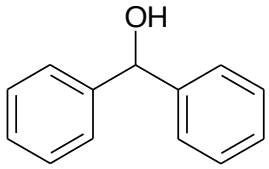
Chem.: 145	**Midterm II ***	**Time: 1 hour**

Name: ---------- St. No. (----------)

Group NO. (----------) Serial No.(----------)

I) for the following questions choose the correct name according to IUPAC rules:

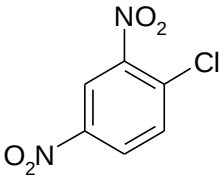
1-



a) Diphenylmethanol. b) Benzyl phenol.

c) Dibenzyl methanol. d) Benzyl phenyl alcohol.

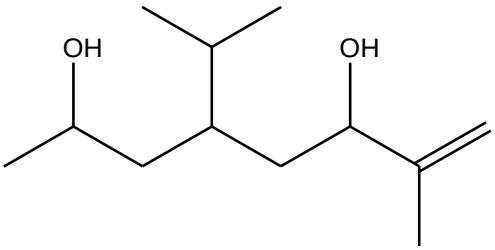
2-



a) 1-Chloro-2,4-diaminobenzene. b) 1,3-Dinitro-4-chlorobenzene.

c) 1-Chloro-2,4-dinitrobenzene. d) 1,3-Diamino-4-chlorobenzene.

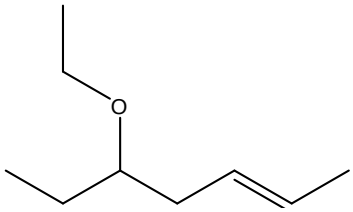
3-



a) 5-Isopropyl-2-methyl-1-octen-3,7-diol. b) 3-Isopropyl-1,6-dimethyl-6-hepten-1,5-diol.

c) 4-Isopropyl-7-methyl-7-octen-2,6-diol. d) 3,5-Diisopropyl-1-methylpentan-1,5-diol.

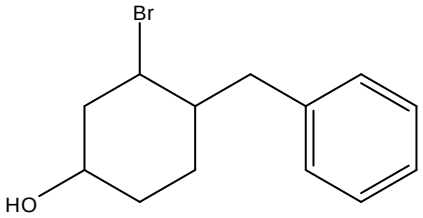
4-



a) 5-Ethoxy-2-heptene. b) Ethyl heptyl ether.

c) 3-Ethoxy-5-heptene. d) Heptenyloxyethane.

5-

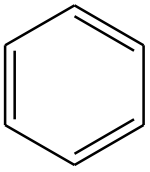


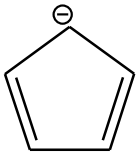
a) 1-Bromo-3-hydroxy-6-phenylcyclohexane. b) 1-Phenyl-2-bromo-4-cyclohexanol.

c) 1-Benzyl-2-bromo-4-hydroxycyclohexane. **d) 4-Benzyl-3-bromocyclohexanol.**

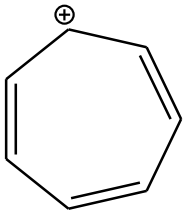
II) For the following questions choose the best answer

6. Which of the following is ***not*** aromatic?

a) 

b) 

c) 

d) 

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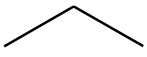
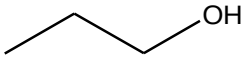
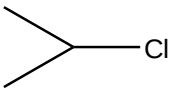
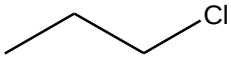
7. Which of the following compounds has the highest boiling point?

a) 

b) 

c) 

d) 

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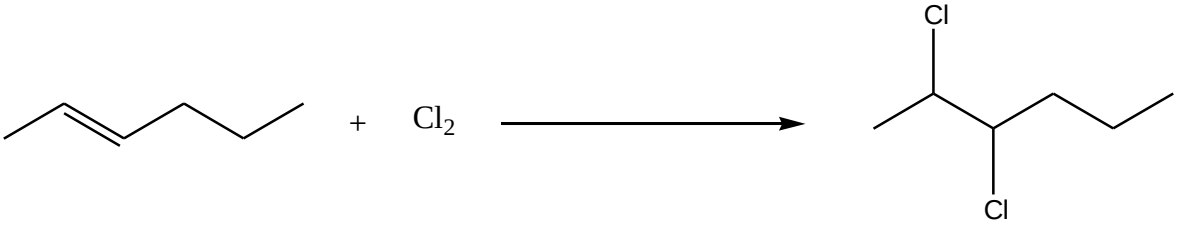
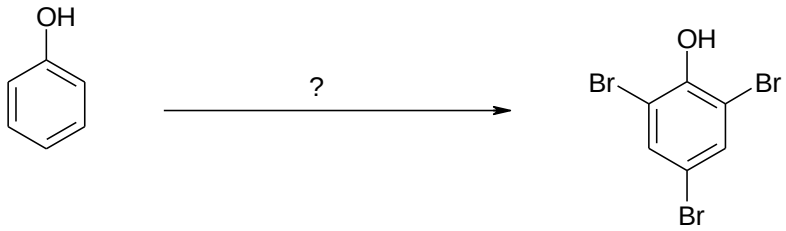
8. What are the correct conditions for this reaction?



a) CCl_4 b) UV light c) Heat d) $FeCl_3$

9. What are the right reagents and conditions for this reaction?



a) Br_2 / $FeBr_3$ b) Br_2 / $AlCl_3$ c) Br_2 / CCl_4 **d) Br_2 / H_2O**

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10. How much is the resonance energy of benzene ring?

a) 36 Kcal. b) 76 Kcal. c) 46 Kcal. d) 56 Kcal.

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11. Which of the following compounds is the least soluble in water?

a) Propanetriol b) Propanol

c) Phenol. d) Propanediol

III) For the following structures choose the Common name:

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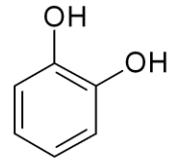
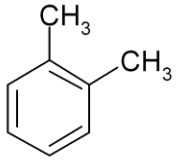
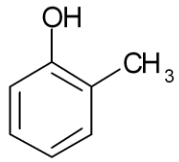
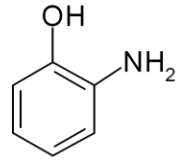
12. Which of the following is o-Cresol?

a) 

b) 

c) 

d) 

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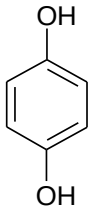
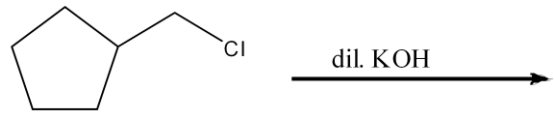
13. What is the common name of the following structure?

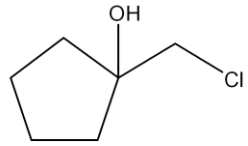


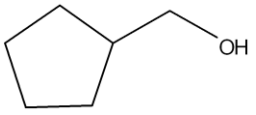
a) Catechol. b) Resorcinol. c) Pyrogallol. **d) Hydroquinone.**

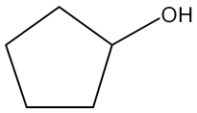
IV) For the following questions choose the major or the main product

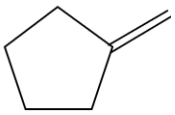
14.



a) 

b) 

c) 

d) 

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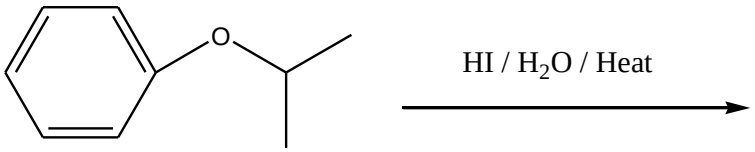
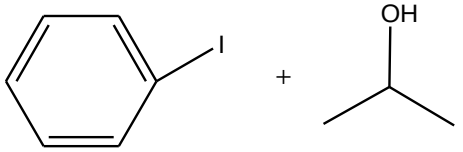
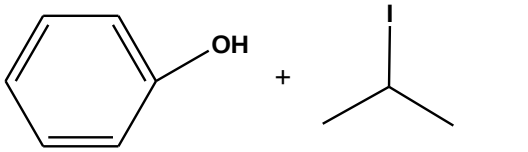
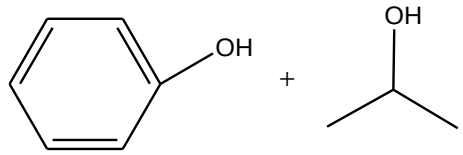
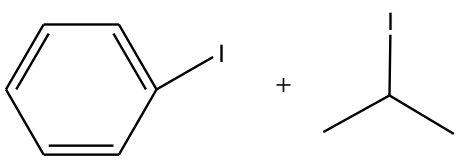


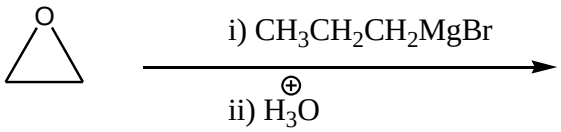
a) 

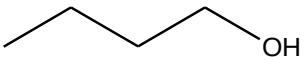
b) 

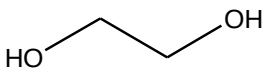
c) 

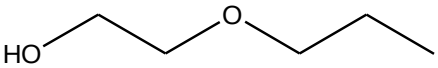
d) 

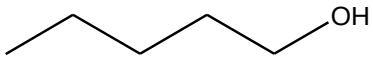
16.



a) 

b) 

c) 

d) 

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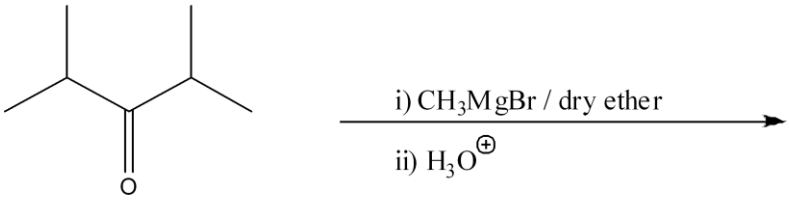
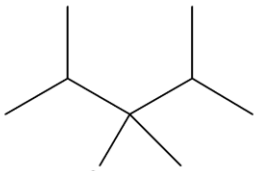
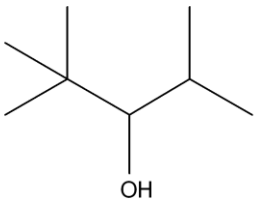
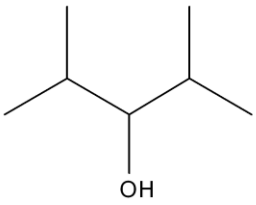
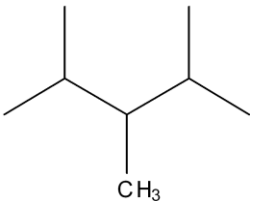


a) 

b) 

c) 

d) 

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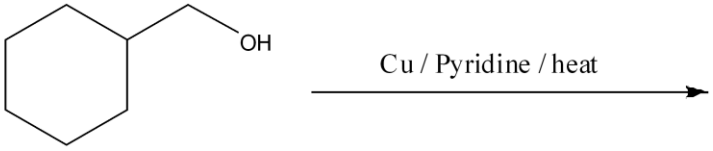
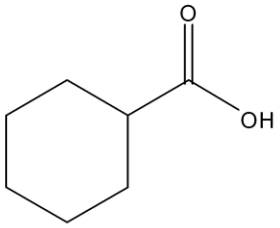
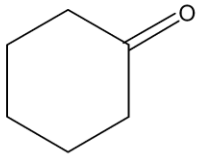
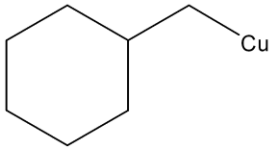
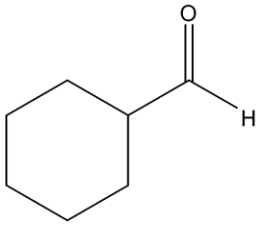


a) 

b) 

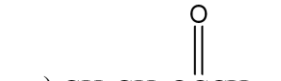
c) 

d) 

19.

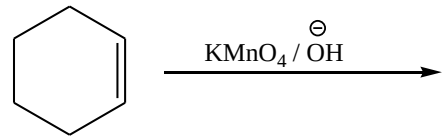
a) $CH_3CH_2OCH_3$

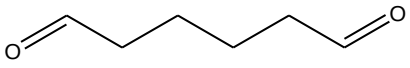
b) 

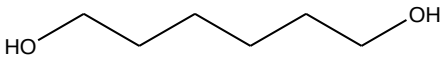
c) 

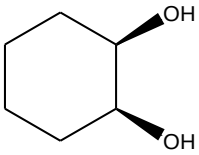
d) $CH_3CH_2COCH_3$

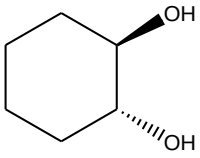
20.



a) 

b) 

c) 

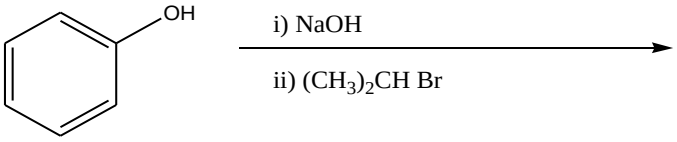
d) 

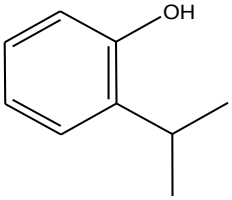
Bonus Questions:

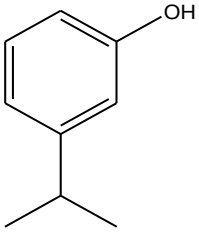
1. A C_8H_{10} hydrocarbon is nitrated by HNO_3 and sulfuric acid. Two $C_8H_9NO_2$ isomers are obtained. Which of the following fits this evidence?

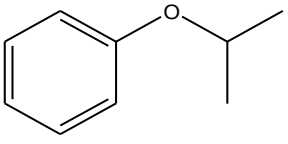
a) *para*-xylene. b) *ortho*-xylene. c) *meta*-xylene. **d) Ethylbenzene.**

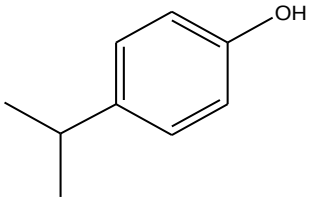
2. What is the major product of this 2 step reaction?



a) 

b) 

c) 

d) 

Best Wishes

Dr. Naked Elsayed, Dr. Siham Lahsasni, Dr. Noha Elnagdi

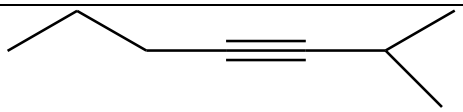
King Saud University (The Preparatory Year)

Chem.: 145 Midterm I * Time: 1 hour

Name: ---------- St. No. (----------)

Group NO. (----------) Serial No.(----------)

I) Choose the correct answer for the following:

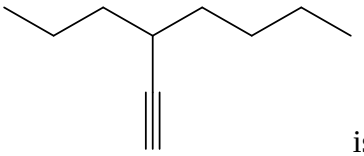
1- The common name for  is:

a) 6-Methyl-4-heptyne .

b) Isopropylpropylacetylene.

c) 2-Methyl-3-heptyne.

d) Propylisopropylacetylene.

2- The IUPAC name for this compound  is:

a) 3-Butylhexyne.

b) 4-Acetyleneoctane.

c) 3-Propyl-1-heptyne.

d) Octylacetylene.

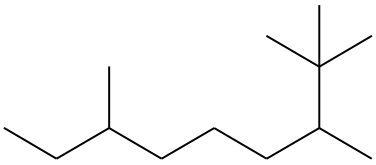
3- The IUPAC name for $(CH_3)_2CHCH(CH_3)CH_2CH=CH_2$ is :

a) 4,5,5-Trimethyl-1-pentene.

b) 4-Methyl-4-isopropyl-1-butene.

c) 2,3-Dimethyl-5-hexene.

d) 4,5-Dimethyl-1-hexene.

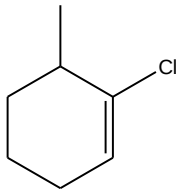
4- The IUPAC name for  is:

a) 3,7,8,8-Tetramethylnonane.

b) 2-tert.Butyl-5-methyloctane.

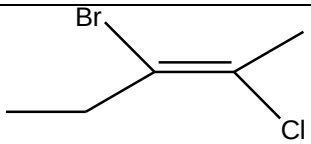
c) 2,2,3,7-Tetramethylnonane.

d) 5-Methyl-2-tert.butyloctane

5- The IUPAC name for  is**:**

a) 2-Chloro-3-methylcyclohexene. b) 2-Chloro-3-methyl-2-cyclohexene.

c) 1-Chloro-6-methylcyclohexene. d) 1-Chloro-6-methyl-2-cyclohexene.

6- The IUPAC name for  is:

a) E-1-Bromo-2-chloro-1-ethylpropene. **b) E-3-Bromo-2-chloro-2-pentene.**

c) Z-3-Bromo-2-chloro-2-pentene. d) Z-1-Bromo-2-chloro-1-ethylpropene

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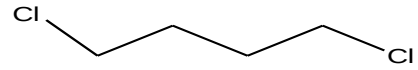
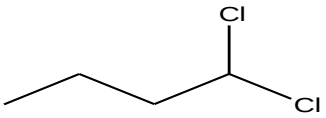
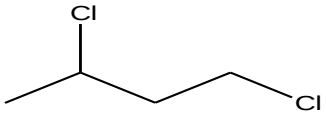
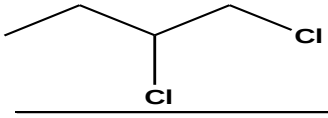
7- Which compound is a likely product from addition of Cl_2 to 1-butene?

a) 

b) 

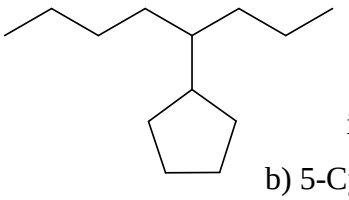
c) 

d) 

8- Which reaction conditions would best convert 2-pentyne to *trans*-2-pentene?

a) Pt catalyst and H_2. b) $Pd(BaSO_4)$ catalyst and H_2.

c) Li in liquid NH_3 and H_2. d) $LiAlH_4$ in dry ether.

9- The IUPAC name for  is:

a) 4-Octylcyclopentane. b) 5-Cyclopentyloctane.

c) 4-Cyclopentyloctane. d) 1-Cyclopentyl-1-propylbutane.

10- What is the IUPAC name for $CH_3CH_2C(CH_3)_2CH_2CH(CH_3)_2$?

a) 2,4,4-Trimethylhexane. b) 2,2,5-Trimethylhexane.

c) 1,1,3,3-Tetramethylpentane. d) 3,3,5-Trimethylhexane.

II) State whether the following statements are true or false

1. 3-Hexene can show geometrical isomerism while 2-methyl-2-butene cannot. **(T)** (F).

2. Boiling point of 3,3-Dimethyloctane is higher than decane. (T) **(F)**.

3. Hydrohalogenation of 4-Methyl-1-hexene with HCl will produce 2-chloro -4-methylhexane.

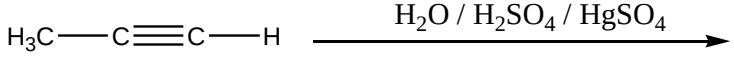
(T) (F).

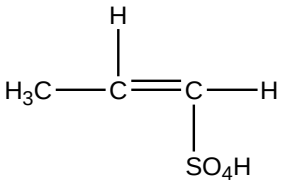
4. The hybridization of all carbon atoms in Butene is sp^2 (T) **(F)**.

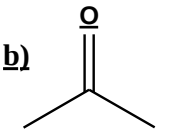
5. The sigma bond between hydrogen and carbon atoms in acetylene is made by overlap of sp^2 hybridized orbital of a carbon atom with 1S orbital of hydrogen atom. (T) **(F)**.

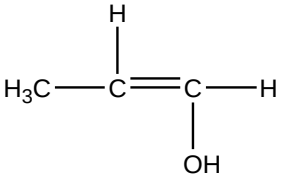
III) Choose the correct and the major product for the following reactions:

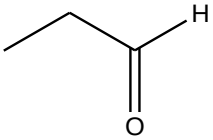
1-



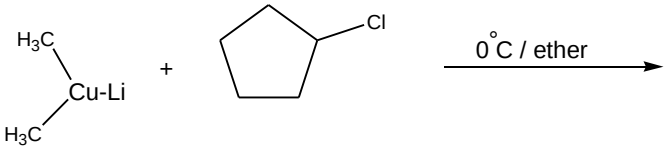
a) 

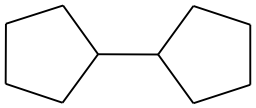
b) 

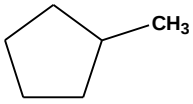
c) 

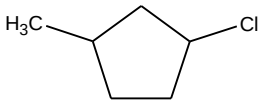
d) 

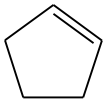
2-



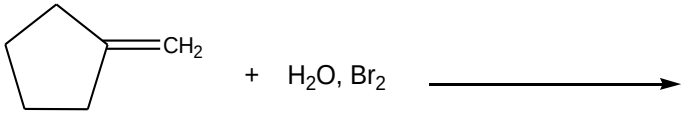
a) 

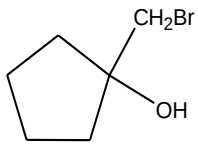
b) 

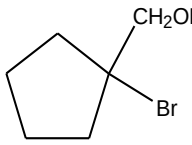
c) 

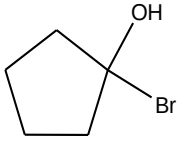
d) 

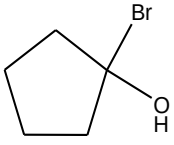
3-



a) 

b) 

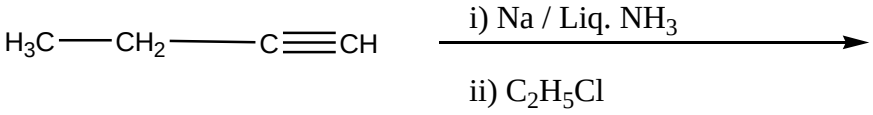
c) 

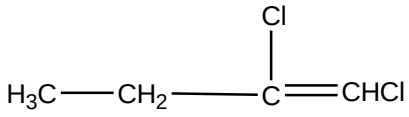
d) 

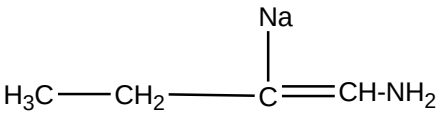
4- What is the best reagent used for the following reaction?

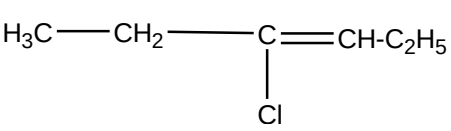
a) Conc H_2SO_4 **b) KOH/Alcohol/heat** c) Zn/acetic acid d) Br_2, H_2O

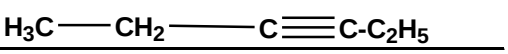
5-



a) 

b) 

c) 

d) 

(IV) Bonus:

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1. Which of the following is the correct IUPAC name for the compound that has the molecular formula C_4H_9Cl?

a) 3-Chlorobutane. **b) 1-Chloro-2-methylpropane.**

c) 2-Chloro-2-methylbutane d) 1-Chloro-3-methylpropane.

---

2. A compound has the molecular formula of C_6H_{12} reacts with ozone to yield two moles of a single product with molecular formula of C_3H_6O. The IUPAC name of this C_6H_{12} is :

a) Cyclohexane. b) 2-Hexene.

c) Cyclohexene. **d) 2,3-Dimethyl-2-butene.**

Dr. Nahed Nasser, Dr Noha Elnagdi and Dr. Siham Lahsasni

وبالله التوفيق،،،

King Saud University (The Preparatory Year)

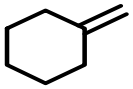
Chem.: 145	**Midterm I ***	**Time: 1 hour**

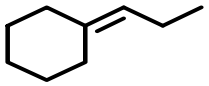
Name: ---------- St. No. (----------)

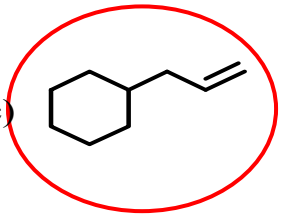
Group NO. (----------) Serial No. (----------)

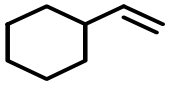
I) Choose the correct answer for the following:

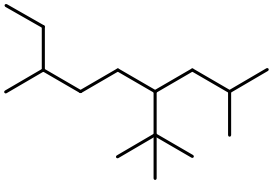
1- Which of the following structures is allyl cyclohexane?

a) 

b) 

√c) 

d) 



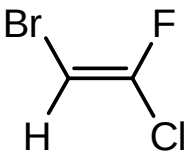
2- The IUPAC name for this compound is:

a) 3-*tert*-Butyl-6-ethyl-1,1,6-trimethylpentane

b) 4-*tert*-Butyl-2,7-dimethylnonane

c) 3-Isobutyl-2,2,6-trimethyloctane

d) 5-*tert*-butyl-2-ethylisononane



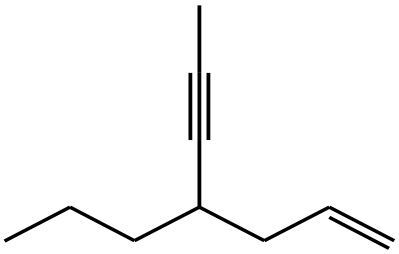
3- The IUPAC name for this compound is:

a) 1-Chloro-1-fluoro-2-bromoethene.

b) *trans*-2-Bromo-1-chloro-1-fluoroethene.

c) *E*-2-Bromo-1-chloro-1-fluoroethene.

d) *Z*-1-Chloro-1-fluoro-2-bromoethene.

4- The IUPAC name for this compound  is:

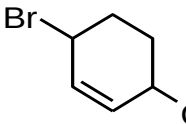
a) 4-Allyl -2-heptyne **b) 4- Propyl-1-hepten-5-yne**

c) 4-Propyl-6-hepten-2-yne d) 4-Allyl-5-heptyne

5- Which of the following structures is vinyl acetylene?

a) $HC\equiv C-CH=CH_2$ b) $H_2C=CH-C\equiv C-CH-CH_2$

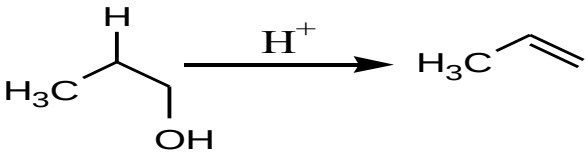
c) $HC\equiv C-CH_2-CH=CH_2$ d) $HC\equiv C-C\equiv CH$

6- The IUPAC name for this compound  **is:**

a) 1-Bromo-4-chloro-5-cyclohexene b) 4-Bromo-1-chloro-2-cyclohexene

c) 6-Bromo-3-chlorocyclohexene **d) 3-Bromo-6-chlorocyclohexene**

7- The following reaction can be classified as:



a) Addition **b) Elimination** c) Substitution d) Hydrogenation

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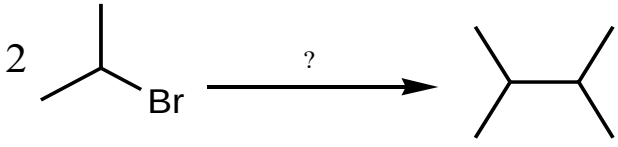
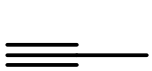
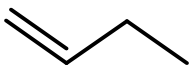
8- Which reaction conditions would be used to accomplish the following transformation?



a) Pt catalyst and H_2 b) Zn / H^+ **c) Na** d) $LiAlH_4$ in ether then H_3O^+

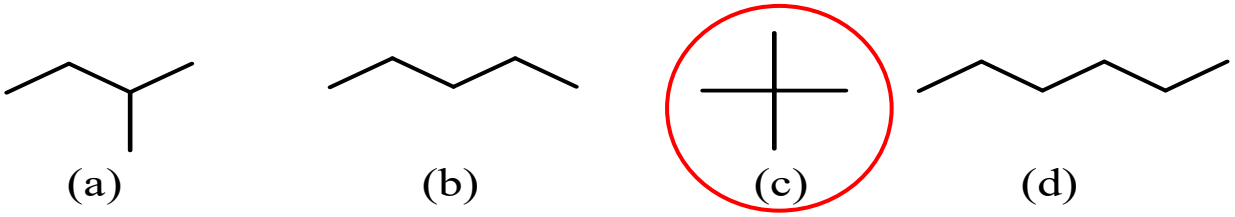
9- Which one of the following compounds has acidic hydrogen?

a)  b)  c)  d) 

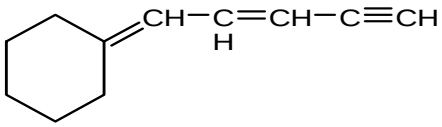
10- Heptene is immiscible with-------

a) $CHCl_3$ b) CCl_4 c) Benzene **d) C_2H_5OH**

11- Which one of the following compounds would have the **lowest** boiling point?

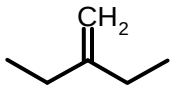
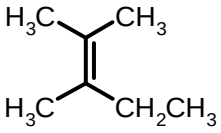
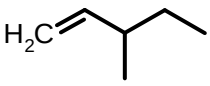
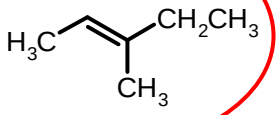


12- How many π (pi) bonds present in the following compound?



a) 7 **b) 4** c) 2 d) 3

13- Which one of the following compounds can show geometric isomerism?

a)  b)  c)  d) 

14- In methane (CH_4) the hydrogen atoms are oriented towards the corners of:

a) Pyramid **b) Tetrahedron** c) Rectangle d) Triagonal planar

15- Which of the following statements about alkenes is **false?**

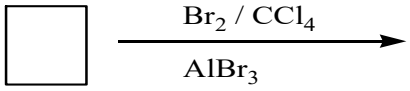
a) They react mainly by addition

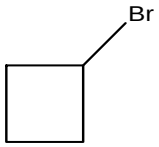
b) They have one or more double bonds

c) They show free rotation about C=C

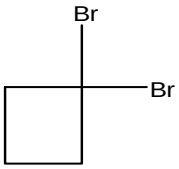
d) They are non polar

II) Choose the correct and the major product for the following reactions:



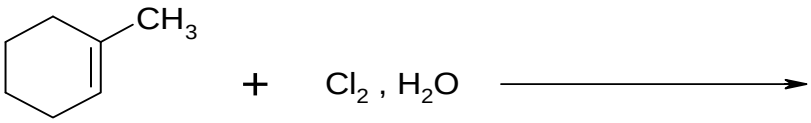
a) 

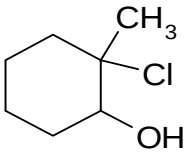
b) $CH_3CH_2CH_2CH_2Br$

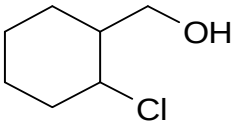
c) 

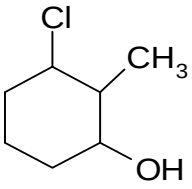
d) $BrCH_2CH_2CH_2CH_2Br$

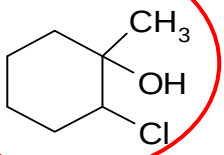
2-



a) 

b) 

c) 

d) 

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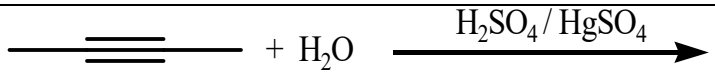
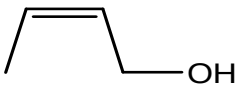
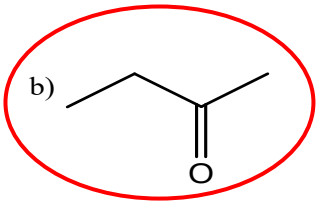
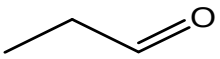
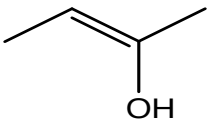


a) 

b) 

c) 

d) 

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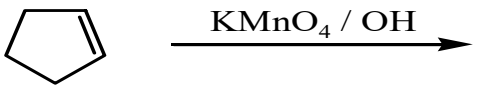
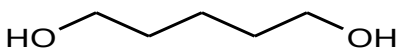
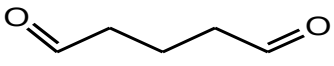
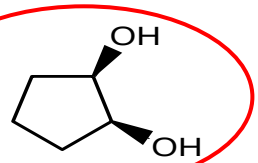
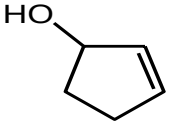


a) 

b) 

c) 

d) 

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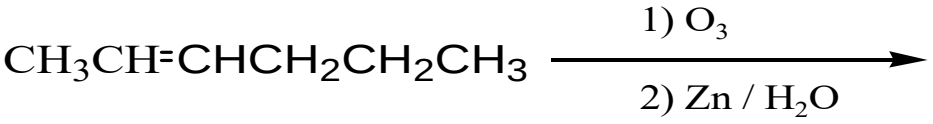
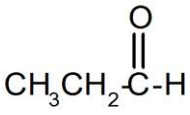
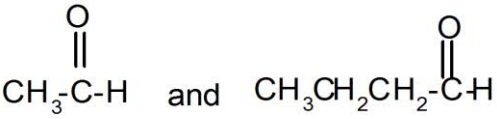
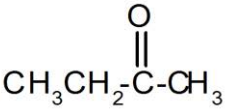
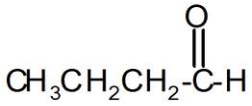


a) 2 

b)  √

c) 2 

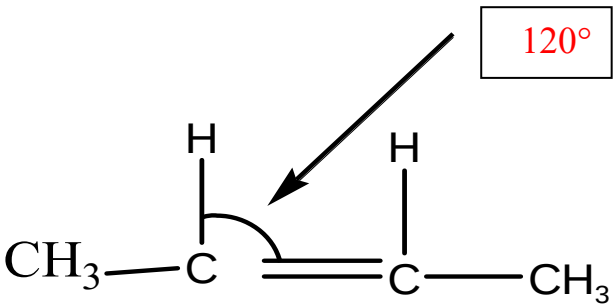
d) 2 

III) Answer the following

1- The following name is **incorrect** according to IUPAC rules.
3-Butyl-1-hexene. **Write the correct name.**

3-Propyl-1-heptene

2- What is the value of the bond angle indicated by the arrow in the following structure?



Dr. Nahed Nasser, Dr. Noha Elnagdi

Dr. Seham AlTerary and Dr. Shatha AlAqeel

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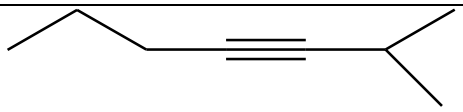
King Saud University (The Preparatory Year)

Chem.: 145	**Midterm I ***	**Time: 1 hour**

Name: ---------- St. No. (----------)

Group NO. (----------) Serial No.(----------)

I) Choose the correct answer for the following:

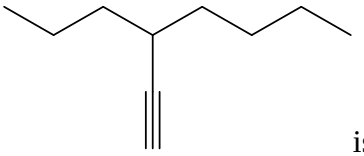
1- The common name for  is:

a) 6-Methyl-4-heptyne .

b) Isopropylpropylacetylene.

c) 2-Methyl-3-heptyne.

d) Propylisopropylacetylene.

2- The IUPAC name for this compound  is:

a) 3-Butylhexyne.

b) 4-Acetyleneoctane.

c) 3-Propyl-1-heptyne.

d) Octylacetylene.

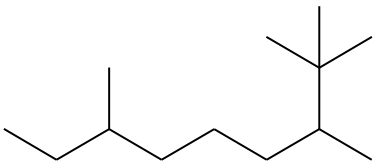
3- The IUPAC name for $(CH_3)_2CHCH(CH_3)CH_2CH=CH_2$ is :

a) 4,5,5-Trimethyl-1-pentene.

b) 4-Methyl-4-isopropyl-1-butene.

c) 2,3-Dimethyl-5-hexene.

d) 4,5-Dimethyl-1-hexene.

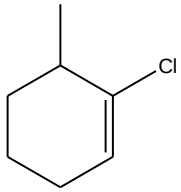
4- The IUPAC name for  is:

a) 3,7,8,8-Tetramethylnonane.

b) 2-tert.Butyl-5-methyloctane.

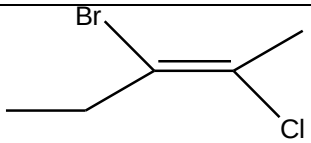
c) 2,2,3,7-Tetramethylnonane.

d) 5-Methyl-2-tert.butyloctane

5- The IUPAC name for  is**:**

a) 2-Chloro-3-methylcyclohexene. b) 2-Chloro-3-methyl-2-cyclohexene.

c) 1-Chloro-6-methylcyclohexene. d) 1-Chloro-6-methyl-2-cyclohexene.

6- The IUPAC name for  is:

a) E-1-Bromo-2-chloro-1-ethylpropene. **b) E-3-Bromo-2-chloro-2-pentene.**

c) Z-3-Bromo-2-chloro-2-pentene. d) Z-1-Bromo-2-chloro-1-ethylpropene

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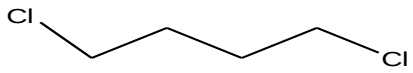
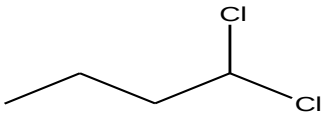
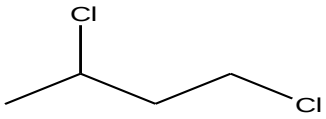
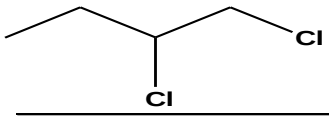
7- Which compound is a likely product from addition of Cl_2 to 1-butene?

a) 

b) 

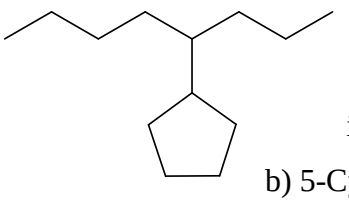
c) 

d) 

8- Which reaction conditions would best convert 2-pentyne to *trans*-2-pentene?

a) Pt catalyst and H_2. b) $Pd(BaSO_4)$ catalyst and H_2.

c) Li in liquid NH_3 and H_2. d) $LiAlH_4$ in dry ether.

9- The IUPAC name for  is:

a) 4-Octylcyclopentane. b) 5-Cyclopentyloctane.

c) 4-Cyclopentyloctane. d) 1-Cyclopentyl-1-propylbutane.

10- What is the IUPAC name for $CH_3CH_2C(CH_3)_2CH_2CH(CH_3)_2$?

a) 2,4,4-Trimethylhexane. b) 2,2,5-Trimethylhexane.

c) 1,1,3,3-Tetramethylpentane. d) 3,3,5-Trimethylhexane.

II) State whether the following statements are true or false

1. 3-Hexene can show geometrical isomerism while 2-methyl-2-butene cannot. **(T)** (F).

2. Boiling point of 3,3-Dimethyloctane is higher than decane. (T) **(F)**.

3. Hydrohalogenation of 4-Methyl-1-hexene with HCl will produce 2-chloro -4-methylhexane.

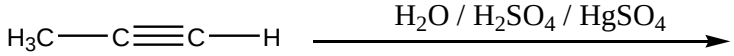
(T) (F).

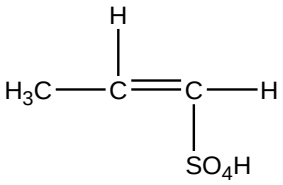
4. The hybridization of all carbon atoms in Butene is sp^2 (T) **(F)**.

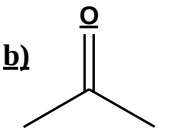
5. The sigma bond between hydrogen and carbon atoms in acetylene is made by overlap of sp^2 hybridized orbital of a carbon atom with 1S orbital of hydrogen atom. (T) **(F)**.

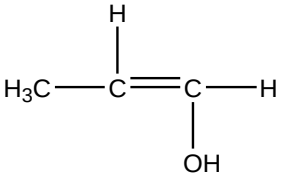
III) Choose the correct and the major product for the following reactions:

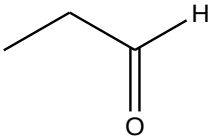
1-



a) 

b) 

c) 

d) 

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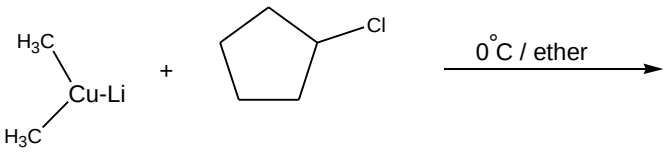
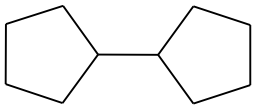
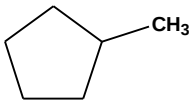
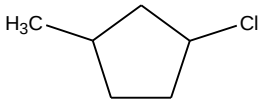
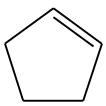


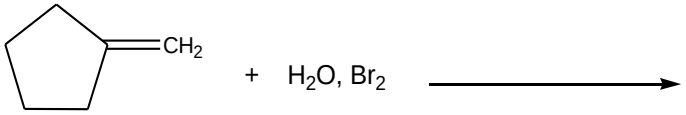
a) 

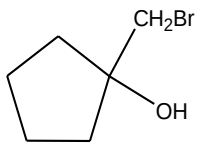
b) 

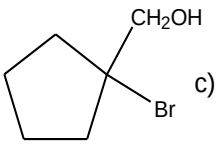
c) 

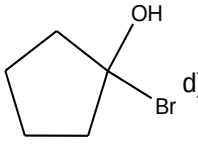
d) 

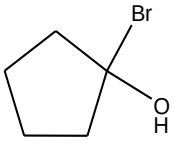
3-



a) 

b) 

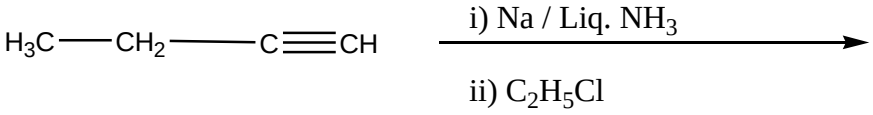
c) 

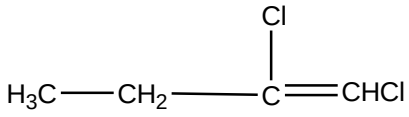
d) 

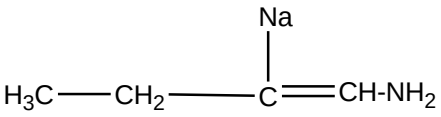
4- What is the best reagent used for the following reaction?

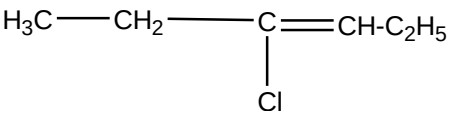
a) Conc H_2SO_4 **b) KOH/Alcohol/heat** c) Zn/acetic acid d) Br_2, H_2O

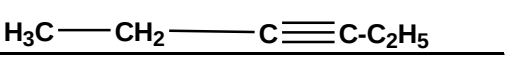
5-



a) 

b) 

c) 

d) 

(IV) Bonus:

1. Which of the following is the correct IUPAC name for the compound that has the molecular formula C_4H_9Cl?

a) 3-Chlorobutane. **b) 1-Chloro-2-methylpropane.**

c) 2-Chloro-2-methylbutane d) 1-Chloro-3-methylpropane.

---

2. A compound has the molecular formula of C_6H_{12} reacts with ozone to yield two moles of a single product with molecular formula of C_3H_6O. The IUPAC name of this C_6H_{12} is :

a) Cyclohexane. b) 2-Hexene.

c) Cyclohexene. **d) 2,3-Dimethyl-2-butene.**

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وبالله التوفيق،،،

جامعة الملك سعود - كلية العلوم – قسم الكيمياء
الاختبار الفصلي الثاني في مقرر 145 كيم (1433هـ - 1434 هـ)
الزمن: 90 دقيقة
أسم الطالب:
رقم الطالب:

ملاحظة هامة: تصحيح الامتحان سيكون بناء علي الإجابة المكتوبة في الجدول السفلي (حرف الإجابة الصحيحة) ولن ينظر إلى بقية الأوراق والتي تعتبر مسودة. يمنع استخدام القلم الرصاص في جدول الإجابة . تكتب الاجابات بالأحرف الكبيرة - Write answers in capital letters

رقم السؤال	الإجابة	رقم السؤال	الإجابة
1	B	16	B
2	C	17	C
3	B	18	A
4	A	19	A
5	A	20	B
6	D	21	C
7	A	22	C
8	D	23	C
9	B	24	C
10	C	25	D
11	A	26	C
12	A	27	C
13	D	28	C
14	A	29	D
15	C	30	C

1. The reaction of two moles of HI with dimethyl ether gives

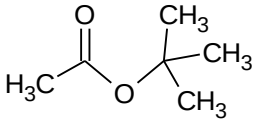
A) 2 CH_3CH_2I

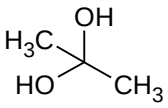
B) 2 CH_3I

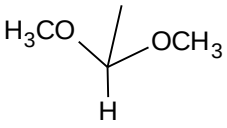
C) 2 CH_3CH_2OH

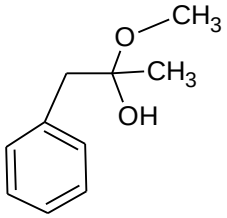
D) CH_3OH + CH_3I

2- The structure of Acetal is:

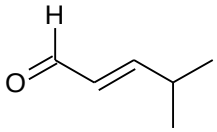
A) 

B) 

C) 

D) 

3. The correct name of the following structure



is :

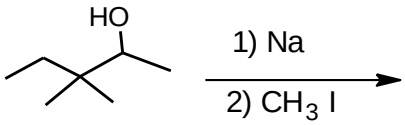
A) 2-Methyl-3-pentenal

B) 4-Methyl-2-pentenal

C) 2-Methyl-3-pentanal

D) 4-Methyl-2-pentanal

4. The product of the following reaction



is:

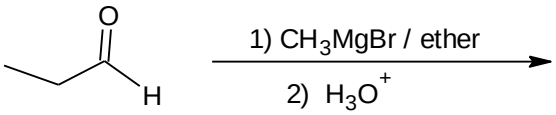
A) Ether

B) Ketone

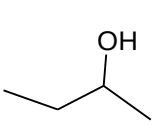
C) Alkyl halide

D) Aldehyde

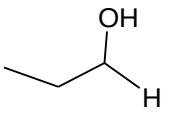
5. The product of the following reaction



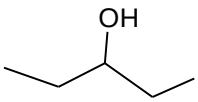
is :



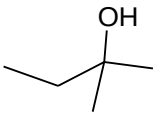
A)



B)

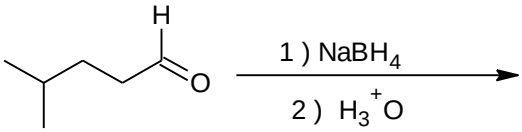


C)



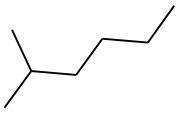
D)

6. The product of the following reaction

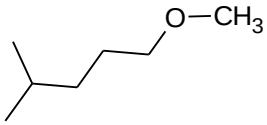


is :

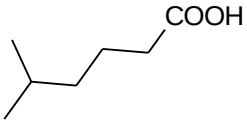
A)



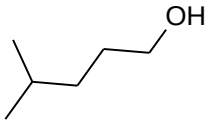
B)



C)



D)

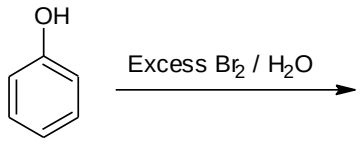


7. The compound with the highest boiling point is

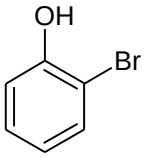
A) Ethanol B) Dimethylether

C) Ethane D) Acetaldehyde

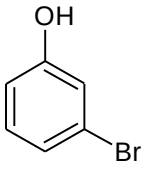
8. The product of the following reaction:



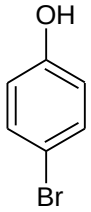
is :



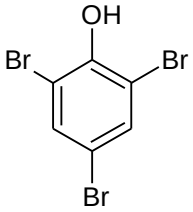
A)



B)

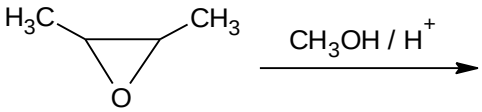


C)



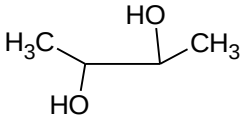
D)

9. The product of the following reaction

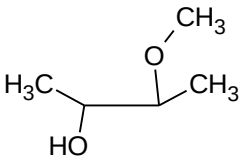


is:

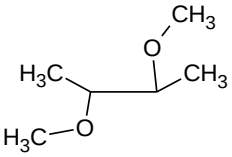
A)



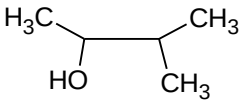
B)



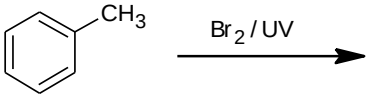
C)



D)



10. The following reaction



gives :

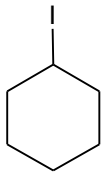
A) *o*-Bromotoluene

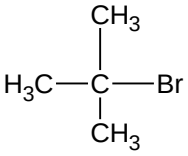
B) *p*-Bromotoluene

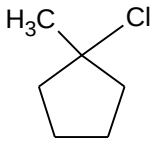
C) Benzyl bromide

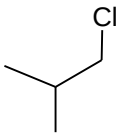
D) *m*-Bromotoluene

11. Which of the following structure is classified as secondary alkyl halides?

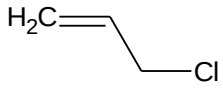
A) 

B) 

C) 

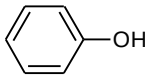
D) 

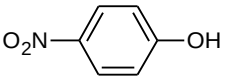
12. The common name of the following structure is

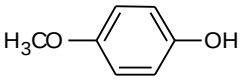


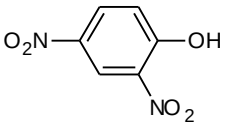
A) Allyl chloride B) Vinyl chloride C) Benzyl chloride D) Propyl chloride

13. Which of the followings is the most acidic compound?

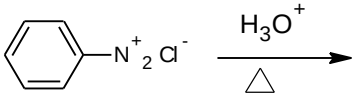
A) 

B) 

C) 

D) 

14. The final product of the following reaction?



is:

A) Phenol B) Aniline C) Xylene D) Anisol

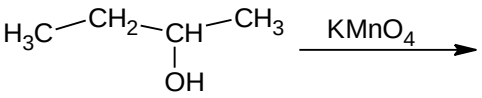
15. The reaction of aldehydes with hydroxyl amine (NH_2OH) gives

A) Hydrazone B) Phenylhydrazone C) Oxime D) Imine

16. Grignard reagents are

A) Alkyl halides B) Alkyl magnesium halides C) Magnesium halides D) Alkyl manganese halides

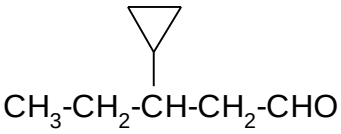
17. The major product of the following reaction



is :

A) Aldehyde B) Carboxylic acid C) Ketone D) Mixture of aldehyde and carboxylic acids

18. The IUPAC name of the following structure

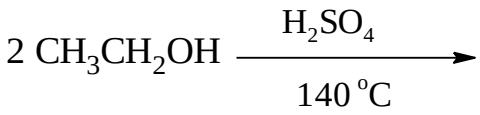


is :

A) 3-Cyclopropylpentanal B) 3-Cyclopropylpentanol

C) 3-Cyclopropylpentanone D) 3-Cyclopropylbutanal

19. The major product of the following reaction



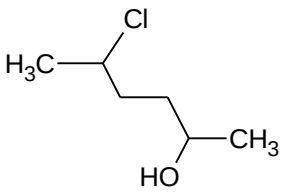
is :

A) CH_3-CH_2-O-CH_2CH_3 B) CH_2=CH_2 C) CH_3-CH_2-CO-CH_3 D) CH_3-CH_2OSO_3H

20. Nucleophiles react with

A) Electrons B) Carbocations C) Carbanions D) Free radical

21. The IUPAC name of the following structure is



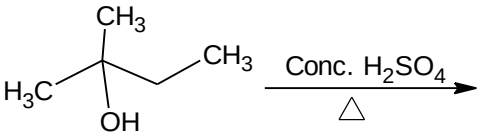
A) 2-Chloro-5-hydroxyhexane

B) 2-Hydroxy-5-chlorohexane

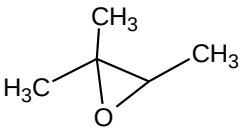
C) 5-Chlorohexan-2-ol

D) 2-Chlorohexan-5-ol

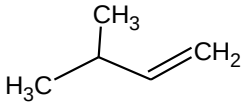
22. The major product of the following reaction



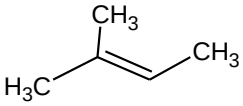
is :



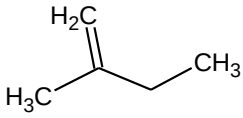
A)



B)

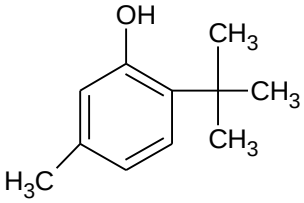


C)



D)

23. The correct IUPAC name of the following structure:



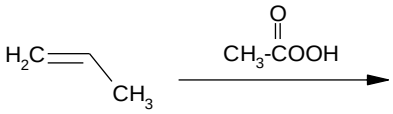
A) 1-Hydroxy-3-methyl-6-isopropylbenzene

B) 5-Methyl-2-*t*-butylphenol

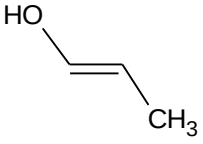
C) 2-*t*-Butyl-5-methylphenol

D) 3-Hydroxy-4-*t*-butyl-1-methylbenzene

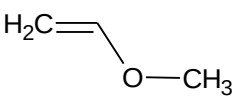
24. The major product of the following reaction



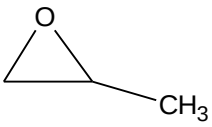
is :



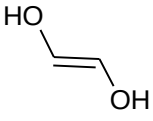
A)



B)

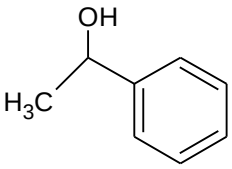


C)

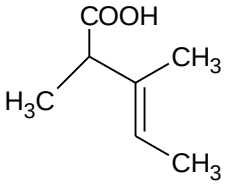


D)

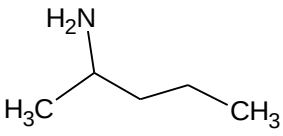
25. Which of the following compounds <u>cannot</u> form hydrogen bonds with itself



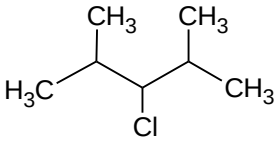
A)



B)



C)



D)

26. The reaction of primary alkyl halide with aq. NaOH gives

A) Alkene B) Diol C) Alcohol D) Epoxide.

27. The hydrolysis of sodium phenoxide gives

A) Benzene B) Toluene C) Phenol D) Anisol

28. The reaction of ethyl alcohol with conc H_2SO_4 to form the corresponding Ethene is classified as

A**)** Substitution reaction

B) Addition reaction

C) Elimination reaction

D) Free redical substitution reaction

29. Reaction of HCN with carbonyl group is classified as

A) Elimination reaction

B) Electrophilic addition reaction

C) Nucleophilic substitution reaction

D) Nucleophilic addition reaction

30. How many hydrogen atoms in Benzaldehyde?

A) 3 B) 5 C) 6 D) 9

جامعة الملك سعود - كلية العلوم – قسم الكيمياء

الاختبار الفصلي الثاني في مقرر 145 كيم (1432هـ–1433هـ)

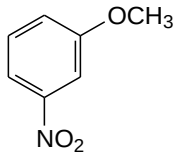
الزمن:90 دقيقة

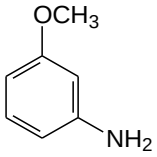
أسم الطالب: **رقم الطالب:**

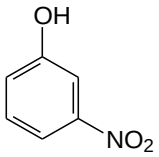
ملاحظة هامة: ضع دائرة حول الإجابة الصحيحة. تصحيح الامتحان سيكون بناء علي الإجابة المكتوبة في الجدول السفلي (حرف الإجابة الصحيحة) ولن ينظر إلى بقية الأوراق والتي تعتبر مسودة.

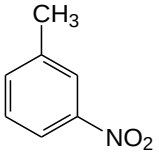
رقم السؤال	الإجابة	رقم السؤال	الإجابة
1		14	
2		15	
3		16	
4		17	
5		18	
6		19	
7		20	
8		21	
9		22	
10		23	
11		24	
12		25	
13			

1- The structure of m-nitroanisole is:

a) 

b) 

c) 

d) 

2- The most acidic compound?

a) Phenol b) P-Nitrophenol c) p-Hydroxyphenol d) 2,4,6-Trinitrophenol

3- Reaction of propene with HCl is classified as:

a) Nucleophilic addition b) Electrophilic addition

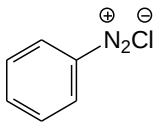
b) Electrophilic substitution d)Elimination

4- How many hydroxyl groups does propylene glycol have?

a) One b) Two c)Three d) Four

5- The molecular formula of p-methyltoluene

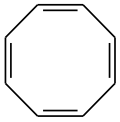
a) C_8H_{10} b) C_8H_{12} c) C_8H_{14} d) C_6H_{14}

6- Hydrolysis of diazonium salt 

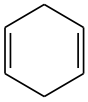
gives:

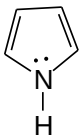
a) Phenol b) Aniline c) Xylene d) Cresol

7- Which of the following compounds has an aromatic character?

a) 

b) 

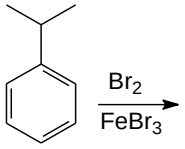
c) 

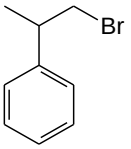
d) 

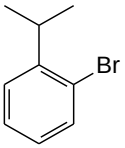
8- Which of the following groups activate the benzene ring towards nitration

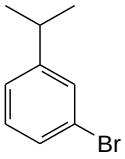
a) —$COOCH_3$ b) —F c) —SO_3H d) —NH_2

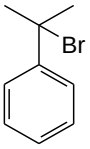
9- One of the expected products of the following reaction is:



a) 

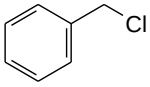
b) 

c) 

d) 

10 - Which of the following compounds is more soluble in water

a) Diethyl ether b) Butanol c) Ethyl bromide d) Benzene

11- The common name of the following structure 

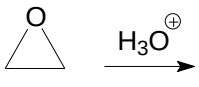
?

a) Benzene chloride b) Benzyl chloride

c) Benzene methyl chloride d) 1-Chloromethylbenzene

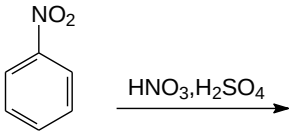
12- Reaction of ethanol with $SOCl_2$ yields:

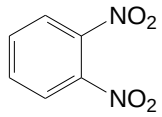
a) Diethyl ether b) Ethyl chloride c) Dichloroethane d) Ethylene

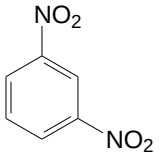
13- The following reaction gives: 

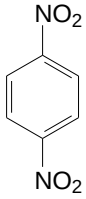
a) $OHCH_2CH_2OH$ b) CH_3OCH_3 c) CH_3CH_2OH d) CH_3CHO

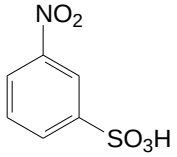
14- The following reaction gives:



a) 

b) 

c) 

d) 

15- Sulfonation of benzene is:

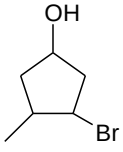
a) Nucleophilic substitution reaction

b) Electrophilic addition reaction

b) Electrophilic substitution reaction

d) Nucleophilic addition reaction

c)

16- The IUPAC name of the following compound: 

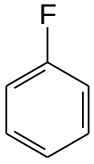
a) 1-Bromo-4-hydroxy-2-methylcyclopentane

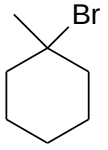
b) 3-Bromo-4-methylcyclopentanol

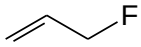
c) 4-Bromo-3-methylcyclopentan-1-ol

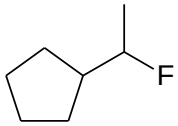
d) 2-Bromo-3-methylcyclopentanol

17- The secondary alkyl halide is:

a) 

b) 

c) 

d) 

18- Addition of NaOH to phenol followed by addition of ethyl bromide gives:

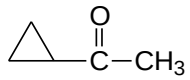
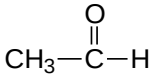
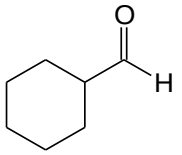
a) Ethanol + bromobenzene

b) Ethylphenoxide

c) Ethyl phenyl ether

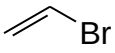
d) 2-Ethylphenol + 4-Ethylphenol

19- Which of the following compounds could be reduced by $NaBH_4$ to give secondary alcohol

a)  b) $CH_3\text{-}CH_2\text{-}CH_2Cl$ c)  d) 

20- Which of the following compounds <u>can not</u> form hydrogen bond with water

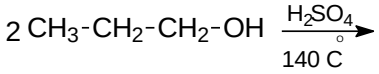
a) t.Butanol b) Methanol c) Dimethylether d)Methyl bromide

21- The common name of the following structure: 

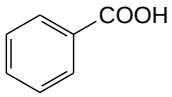
a) Allyl bromide b) Vinyl bromide c) Phenyl bromide d) Bromoethane

22- The number of sigma bond in methylbenzene

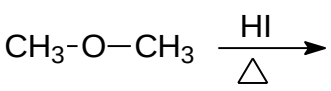
a) 10 b) 9 c) 7 d) 4

23- The product of the following reaction is: 

a) 1-Hexene b) Propane c) Dipropyl ether d) 2-Hexene

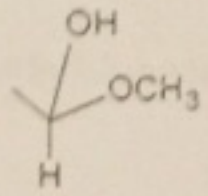
24- Which of the following compounds could be oxidized by $KMnO_4$ to give 

a) Toluene b) t.Butylbenzene c) Isopropylbenzene d) Ethylbenzene

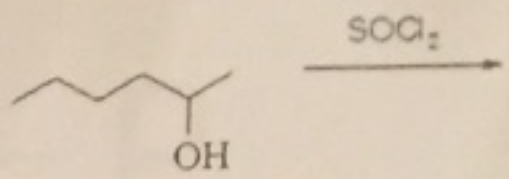
25- The following reaction gives: 

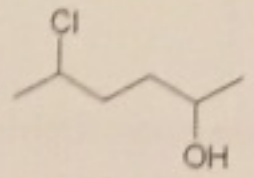
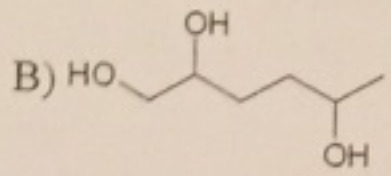
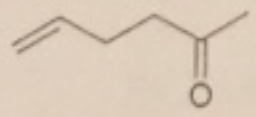
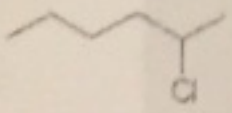
a) Methanol b) Methanol and methyl iodide

c) Iodoethane d) 2 Mol methyl iodide

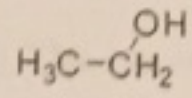
6) The structure  is

A) Hemiacetal B) Ketal C) Acetal D) Hemiketal

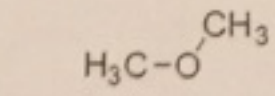
7) The resulting product from the reaction  is

A)  B)  C)  D) 

8) Which of the following statement about compounds (1) and (2) is false?



(1)



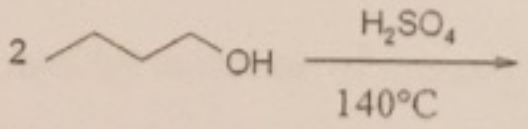
(2)

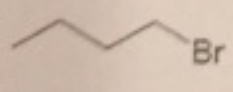
A) (1) is less soluble in water than (2)

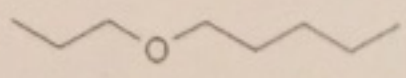
B) (1) can be easily oxidized than (2)

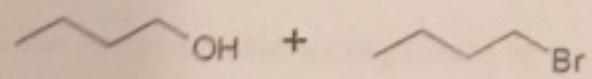
C) (1) has higher boiling point than (2)

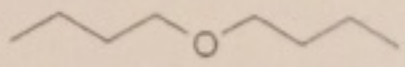
D) (1) and (2) are isomers

9) What is the product of the following reaction? 

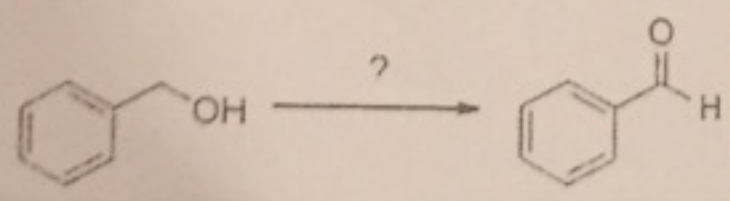
A) 

B) 

C) 

D) 

10) What reagent is needed to accomplish the following transformation?



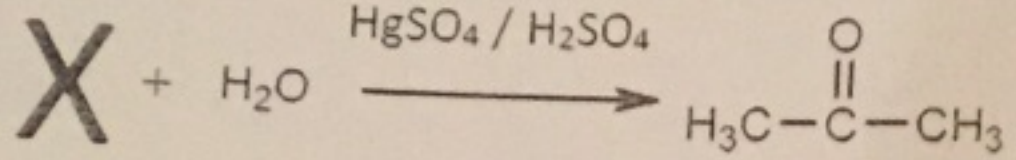
A) $K_2Cr_2O_7$

B) $LiAlH_4$

C) $KMnO_4$

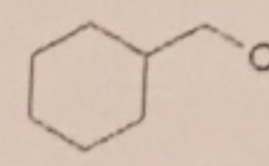
D) PCC

17) What is the starting material (X) used in the following reaction?

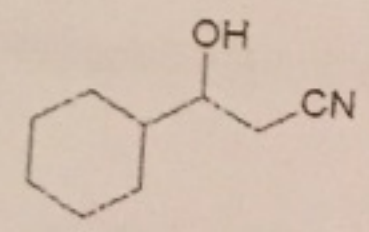


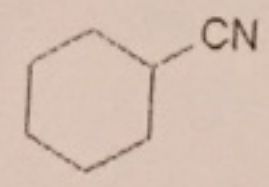
A) Propene B) 2-propanol C) Propyne D) 1-propanol

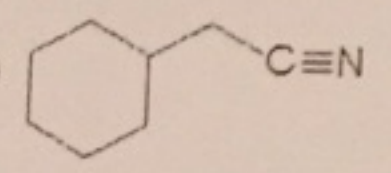
18) The product of the following reaction

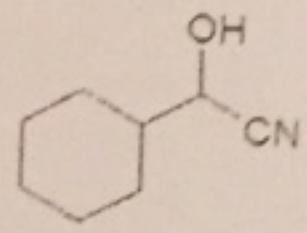


is

A) 

B) 

C) 

D) 

19) Methyl vinyl ketone is the common name of

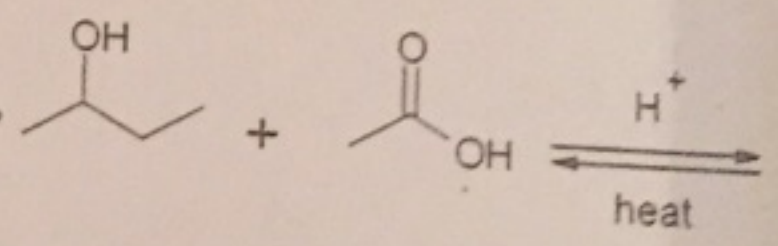
A) 2-Buten-3-one

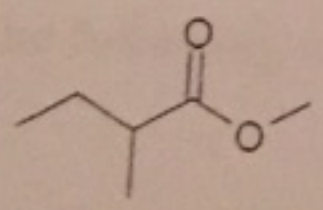
B) 1-Buten-2-one

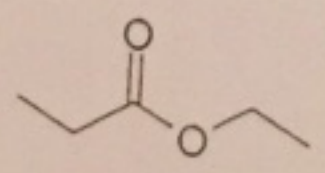
C) 1-Buten-3-one

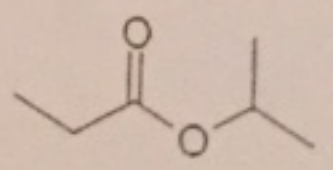
D) 3-Buten-2-one

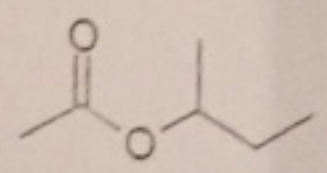
20) What is the product formed in the following reaction?



A) 

B) 

C) 

D) 

21) Nucleophilic addition of ammonia to aldehydes and ketones results in the formation of

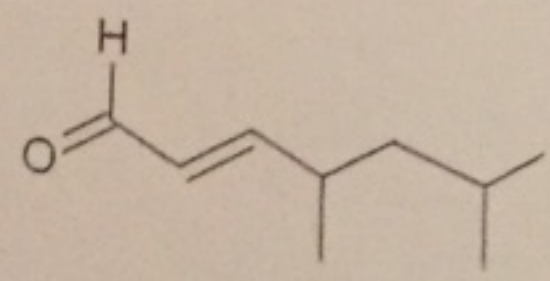
A) Imine

B) Oxime

C) Hydrazine

D) Hydrazone

22) The correct IUPAC name of the following structure



is

A) 4,6-Dimethyl-2-heptenal

B) 5-Isopropyl-4-methyl-2-pentenal

C) 2,4-Dimethyl-5-heptanal

D) 2,4-Dimethyl-5-heptenal

11) Ozonolysis of 2-methyl-2-butene results in the formation of

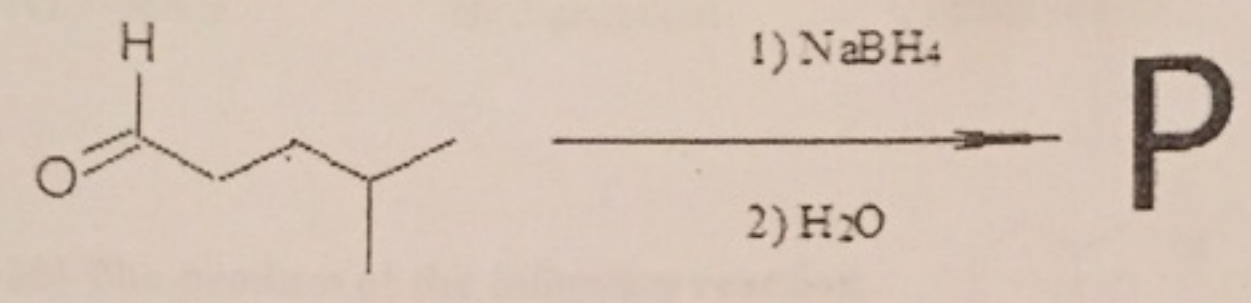
A) Dialdehyde

B) One aldehyde and one ketone

C) Two aldehydes

D) Two ketones

12) What is the product (P) of the following reaction?



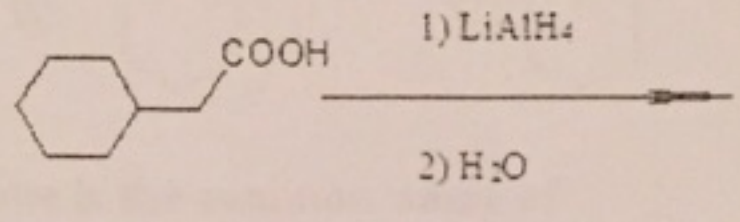
A) 4-Methylpentane

B) 2-Methylpentane

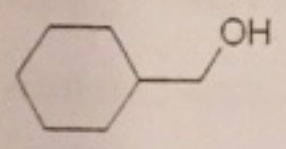
C) 4-Methyl-1-pentanol

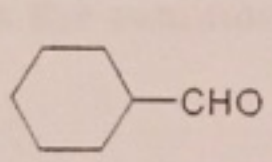
D) 4-Methyl-2-pentene

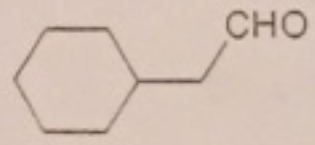
13) The reaction

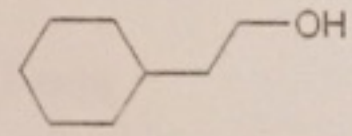


gives

A) 

B) 

C) 

D) 

14) Which of the following statements about aldehydes is false?

A) Can react with ammonia

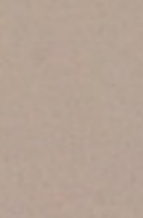
B) Can be formed by oxidation of primary alcohol

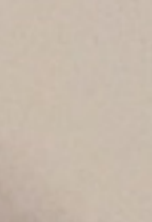
C) Can react with ketone to give acetal

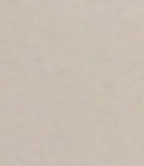
D) Can be oxidized to carboxylic acid

15) The most acidic compound is

A) 

B) 

C) 

D) 

16) The structure of ethyl isopropyl ether is

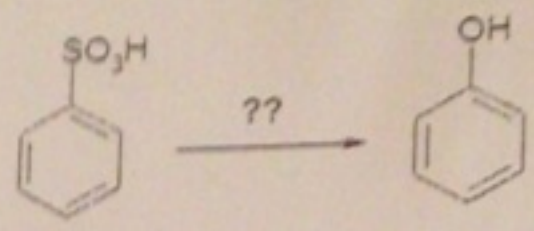
A)

B)

C)

D)

29) What reagent is needed to accomplish the following transformation?



A) Na /heat / H_3O^+

B) $KMnO_4$ / H_3O^+

C) NaOH /heat / H_3O^+

D) $Na_2Cr_2O_7$ /heat / H_3O^+

30) Which of the following compounds <u>can not</u> be classified as a secondary halide?

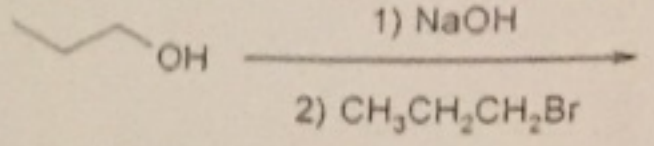
A) 1-Chloro-1-isopropylcyclopentane

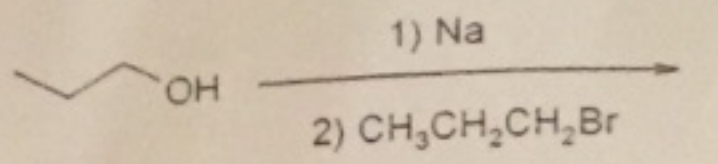
B) 2-Bromobutane

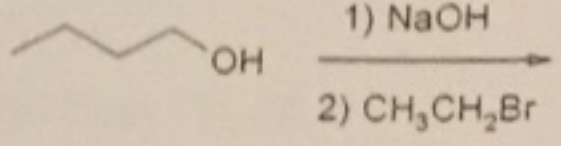
C) Cyclohexyl iodide

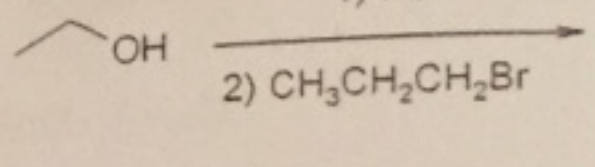
D) Isopropyl bromide

23) Which one of the following reactions gives propyl ethyl ether?

A) 

B) 

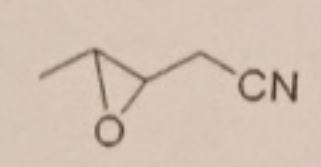
C) 

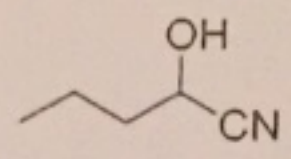
D) 

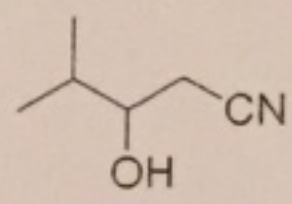
24) Two molecules (X, Y) have the same chemical formula C_2H_6O but the boiling point of X is higher than Y, So the compound Y is

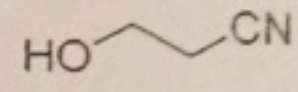
A) Ethene B) Methoxy methane C) Ethanal D) Ethanol

25) Which of the following compounds is a cyanohydrin?

A) 

B) 

C) 

D) 

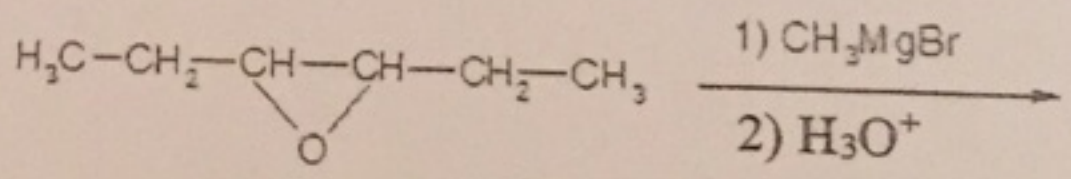
26) The carbonyl-O-atom in aldehydes and ketones can be attacked by

A) O-atom of water

B) Electrophile

C) Nucleophile

D) Anion

27) The following reaction 

yields

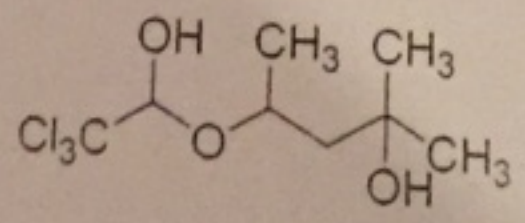
A) 3-Methyl-4-hexanol

B) 4-Ethyl-3-hexanol

C) 4-Methoxy-3-hexanol

D) 4-Methyl-3-hexanol

28) Which functional group is <u>not present</u> in the following structure?



A) Hemiketal

B) Hemiacetal

C) Trichloromethyl group

D) Tertiary alcohol

King Saud University (The Preparatory Year)

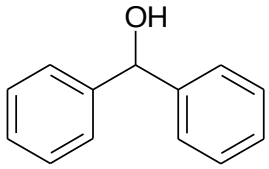
Chem.: 145	**Midterm II ***	**Time: 1 hour**

Name: ---------- St. No. (----------)

Group NO. (----------) Serial No.(----------)

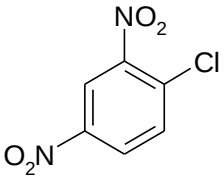
I) for the following questions choose the correct name according to IUPAC rules:

1-



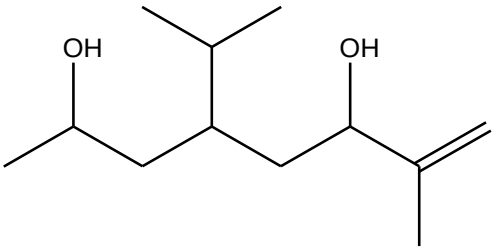
a) Diphenylmethanol.
b) Benzyl phenol.
c) Dibenzyl methanol.
d) Benzyl phenyl alcohol.

2-



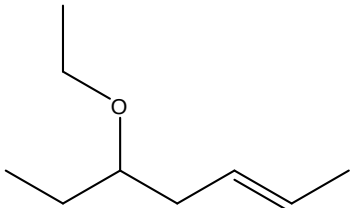
a) 1-Chloro-2,4-diaminobenzene.
b) 1,3-Dinitro-4-chlorobenzene.
c) 1-Chloro-2,4-dinitrobenzene.
d) 1,3-Diamino-4-chlorobenzene.

3-



a) 5-Isopropyl-2-methyl-1-octen-3,7-diol.
b) 3-Isopropyl-1,6-dimethyl-6-hepten-1,5-diol.
c) 4-Isopropyl-7-methyl-7-octen-2,6-diol.
d) 3,5-Diisopropyl-1-methylpentan-1,5-diol.

4-



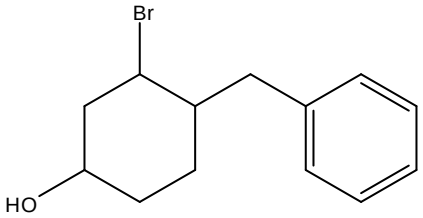
a) 5-Ethoxy-2-heptene.

b) Ethyl heptyl ether.

c) 3-Ethoxy-5-heptene.

d) Heptenyloxyethane.

5-



a) 1-Bromo-3-hydroxy-6-phenylcyclohexane.

b) 1-Phenyl-2-bromo-4-cyclohexanol.

c) 1-Benzyl-2-bromo-4-hydroxycyclohexane.

d) 4-Benzyl-3-bromocyclohexanol.

II) For the following questions choose the best answer

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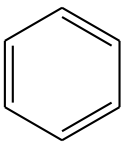
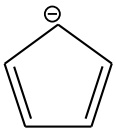
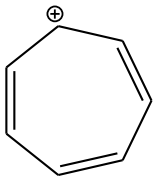
6. Which of the following is ***not*** aromatic?

a) 

b) 

c) 

d) 

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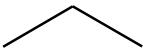
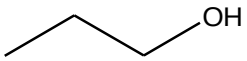
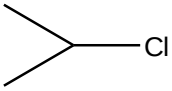
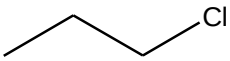
7. Which of the following compounds has the highest boiling point?

a) 

b) 

c) 

d) 

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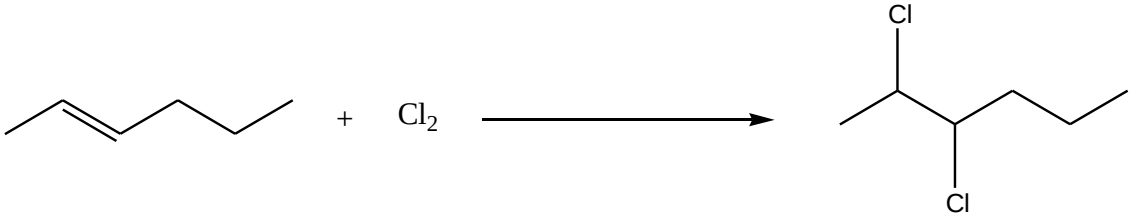
8. What are the correct conditions for this reaction?



a) CCl_4

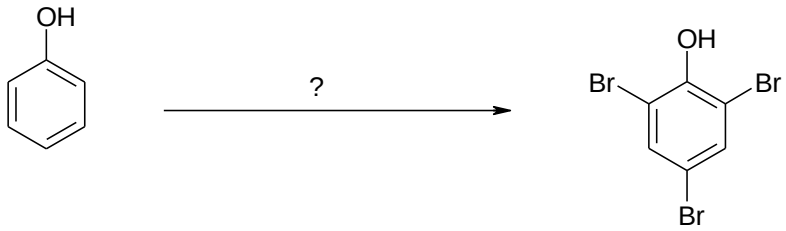
b) UV light

c) Heat

d) $FeCl_3$

---

9. What are the right reagents and conditions for this reaction?



a) Br_2 / $FeBr_3$ b) Br_2 / $AlCl_3$ c) Br_2 / CCl_4 d) Br_2 / H_2O

---

10. How much is the resonance energy of benzene ring?

a) 36 Kcal. b) 76 Kcal. c) 46 Kcal. d) 56 Kcal.

---

11. Which of the following compounds is the least soluble in water?

a) Propanetriol b) Propanol

c) Phenol. d) Propanediol

III) For the following structures choose the Common name:

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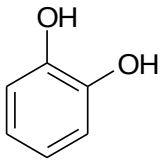
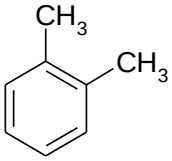
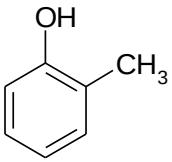
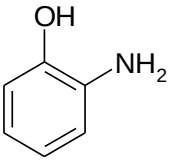
12. Which of the following is o-Cresol?

a) 

b) 

c) 

d) 

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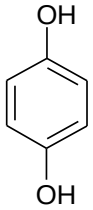
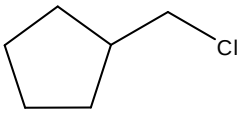
13. What is the common name of the following structure?



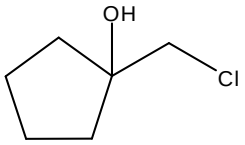
a) Catechol. b) Resorcinol. c) Pyrogallol. d) Hydroquinone.

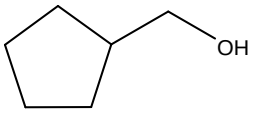
IV) For the following questions choose the major or the main product

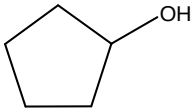
14.

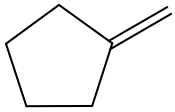


dil. KOH

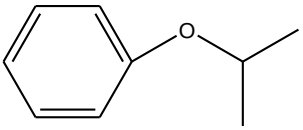
a) 

b) 

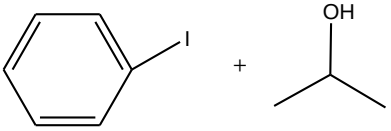
c) 

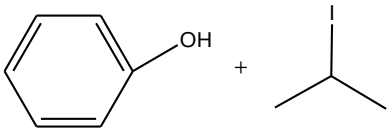
d) 

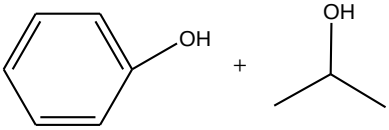
15.

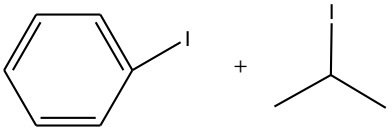


HI / H_2O / Heat

a) 

b) 

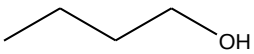
c) 

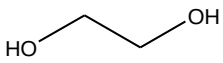
d) 

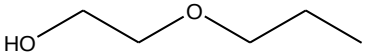
16.

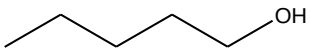
i) $CH_3CH_2CH_2MgBr$

ii) $\overset{\oplus}{H_3O}$

a) 

b) 

c) 

d) 

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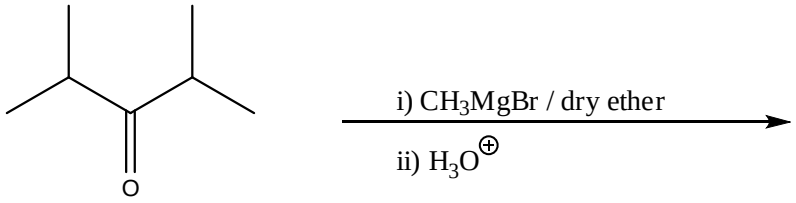
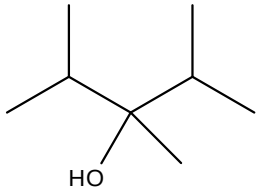
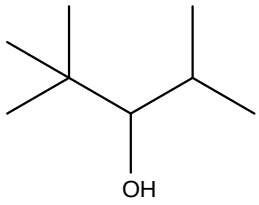
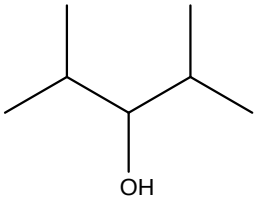
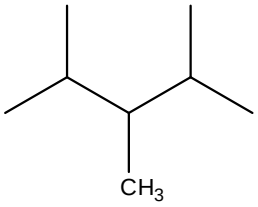


a) 

b) 

c) 

d) 

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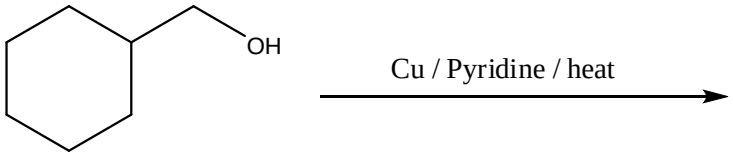
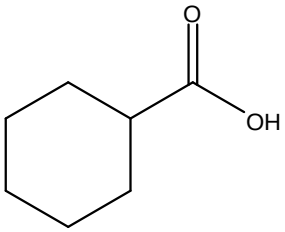
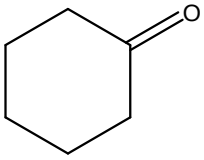
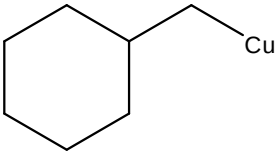
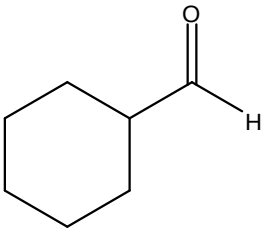


a) 

b) 

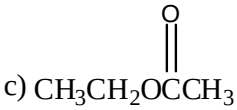
c) 

d) 

19.

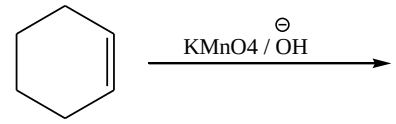
a) $CH_3CH_2OCH_3$

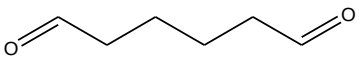
b) 

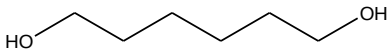
c) 

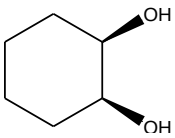
d) $CH_3CH_2COCH_3$

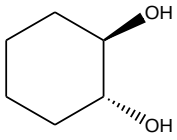
20.



a) 

b) 

c) 

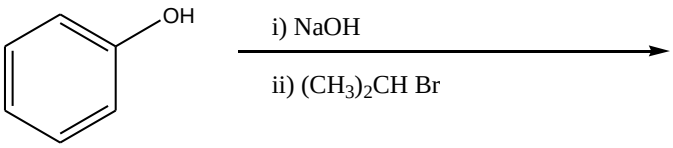
d) 

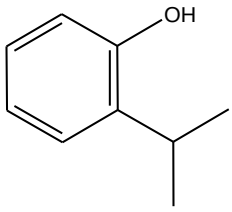
Bonus Questions:

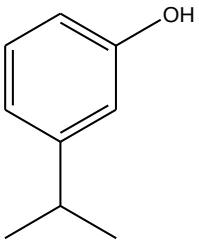
1. A C_8H_{10} hydrocarbon is nitrated by HNO_3 and sulfuric acid. Two $C_8H_9NO_2$ isomers are obtained. Which of the following fits this evidence?

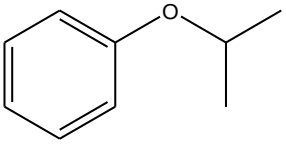
a) *para*-xylene. b) *ortho*-xylene. c) *meta*-xylene. d) Ethylbenzene.

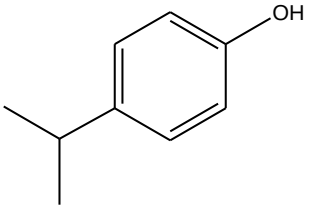
2. What is the major product of this 2 step reaction?



a) 

b) 

c) 

d) 

Best Wishes

Dr. Nahed Elsayed, Dr. Siham Lahsasni, Dr. Noha Elnagdi

King Saud University (The Preparatory Year)

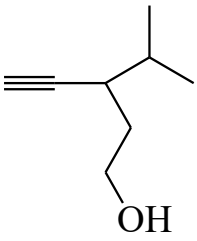
Chem.: 145	**Midterm 2**	**Time: 1 hour**

Name: ---------- **St. No. (----------)**

Group No. (----------) **Serial No. (----------)**

I) Choose the correct answer for the following:

1. The correct **IUPAC name** of the following compound



is:

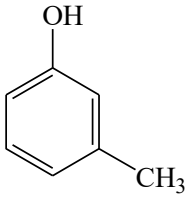
(a) 3-Acetylene-4-methyl-1-pentanol

(b) 3- Isopropyl-4-pentyn-1-ol

(c) 3-Ethynyl-4-methyl-1-pentanol

(d) 3- Isopropyl-1-pentyn-5-ol

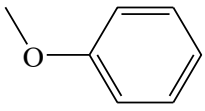
2. The **common name** of this compound

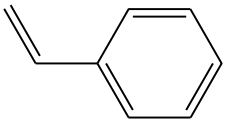


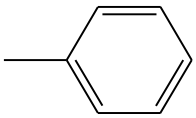
is:

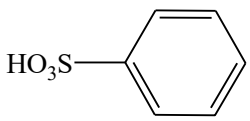
(a) m-Cresol (b) m-Xylene (c) Catechol (d) Resorcinol

3. Which of the following compound has **the common** name "**Styrene**"?

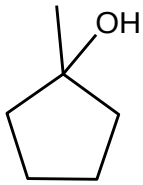
(a) 

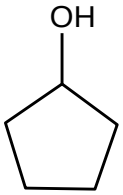
(b) 

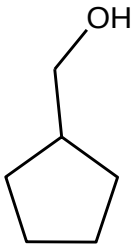
(c) 

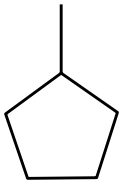
(d) 

4. Which of the following compounds would be oxidized to an aldehyde? **c**

(a) 

(b) 

(c) 

(d) 

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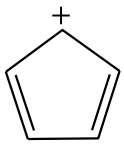
5. The addition of 2 equivalent of HBr to 1-pentyne gives……. as final product.

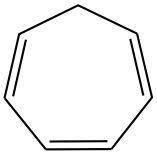
a) 1,2-Dibromopentane b) 2,2-Dibromopentane

c) 1-Bromopentene. d) 2-Bromopentene

---

6. Which of the following compound is aromatic? **c**

(a) 

(b) 

(c) 

(d) 

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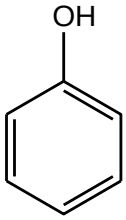
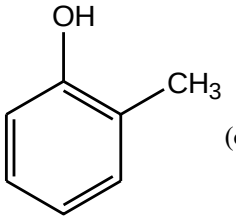
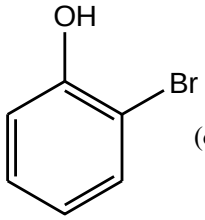
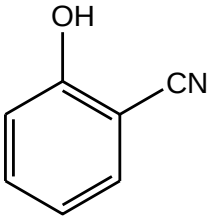
7. Which one of the following **phenols** has **the highest acidity**? **d**

(a) 

(b) 

(c) 

(d) 

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8. Which of the following compounds has the **lowest boiling point**? **a**

(a) Methanol (b) Ethanol (c) Propanol (d) Butanol

---

9. What is **the type of the reaction** between **methyl bromide** and **dil. KOH**?

(a) Electrophilic substitution **(b)** Nucleophilic substitution

(c) Elimination (d) Addition

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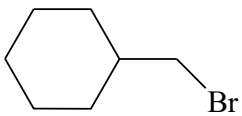
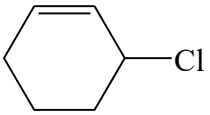
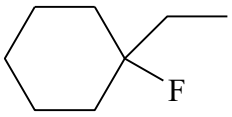
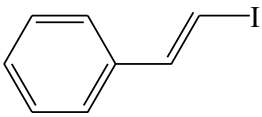
10. Which of these compounds is a **3º alkyl halide**?

(a) 

(b) 

(c) 

(d) 

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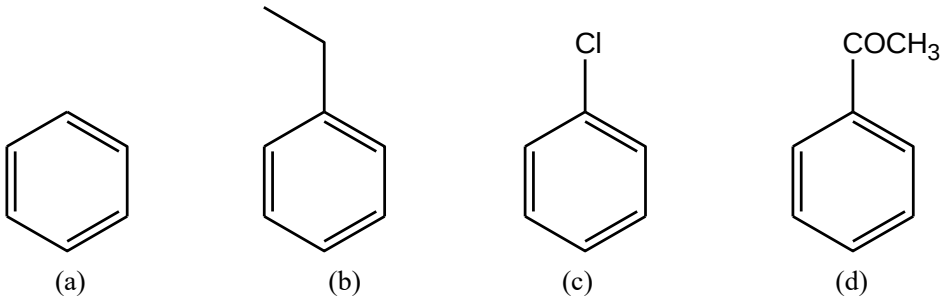
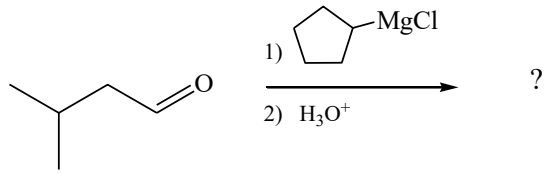
11. The least reactive compound of the following substituted benzene in electrophilic aromatic substitution is: **d**

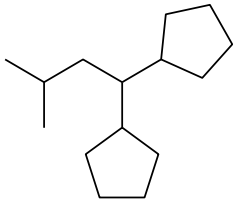


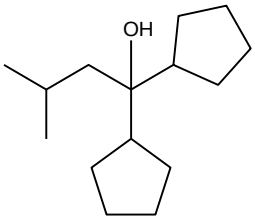
(a) (b) (c) (d)

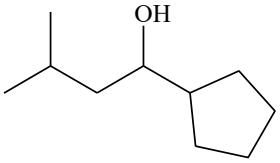
II) Choose the correct and the major product for the following reactions:

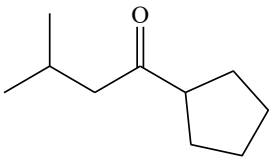
1.



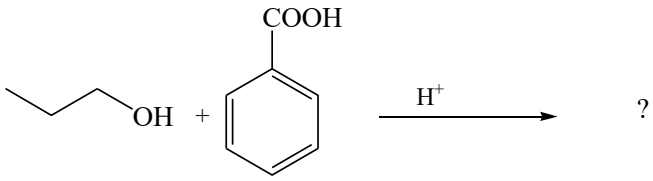
(a) 

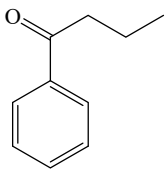
(b) 

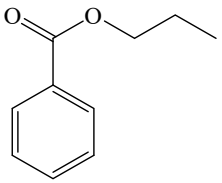
(c) 

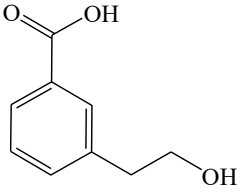
(d) 

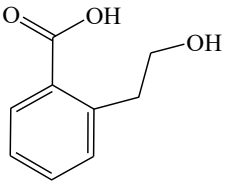
2.



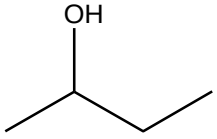
(a) 

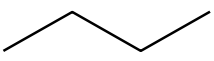
(b) 

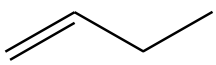
(c) 

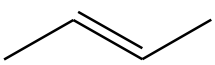
(d) 

3.

(a) 

(b) 

(c) 

(d) 

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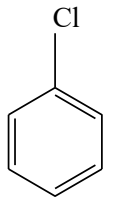
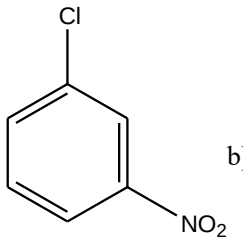
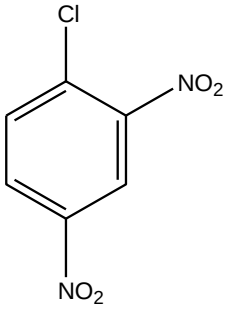
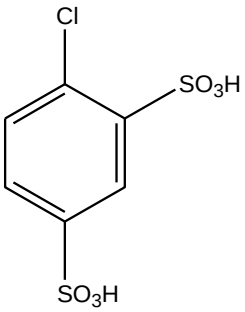


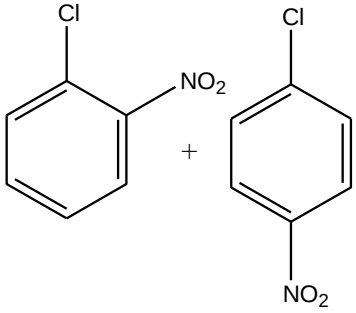
$HNO_3/\ H_2SO_4$?

d

a) 

b) 

c) 

d) 

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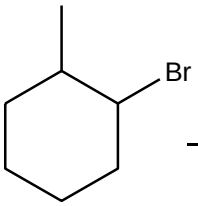
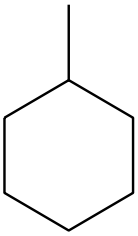
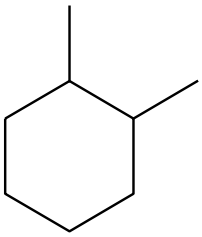
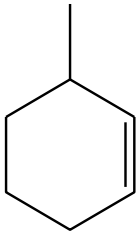


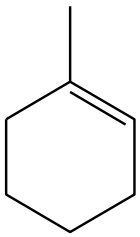
$Zn\ /\ H^+$?

a

a) 

b) 

c) 

d) 

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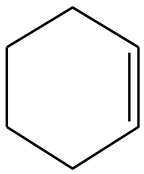
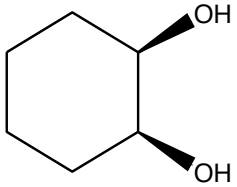
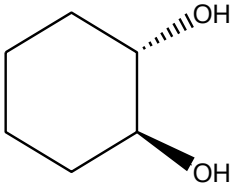
6. **b**

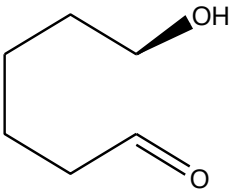


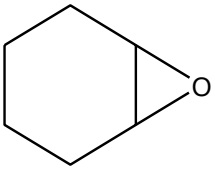
1) $PhCO_3H$

2) H_3O^+ ?

a) 

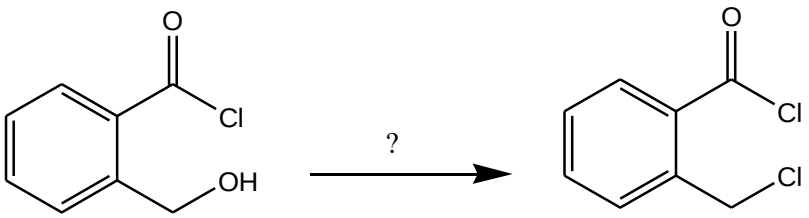
b) 

c) 

d) 

III) Select reagent that can best accomplish the following reaction:

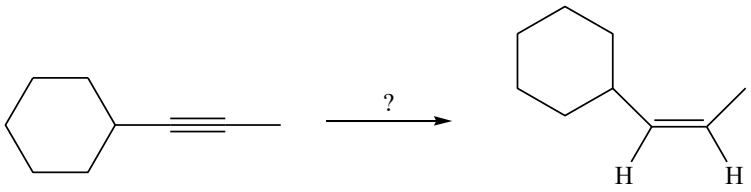
1.



(a) Cl_2/ CCl_4 (b) Cl_2 / UV light

(c) $SOCl_2$ (d) CH_3CH_2Cl/ $AlCl_3$

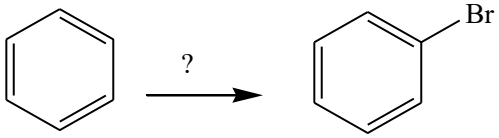
2.



(a) H_2/Na in Liq NH_3 **(b)** H_2/Pd ($BaSO_4$)

(c) H_2/Pt (d) $HgSO_4$/ H_2SO_4

3.



(a) Br_2, heat. (b) Br_2, CCl_4

(c) Br_2, $FeBr_3$ (d) CH_3Br, $AlBr_3$

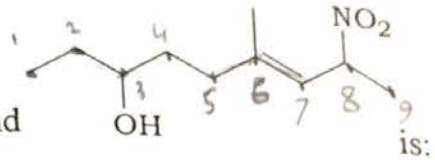
Good Luck

Dr. Siham Lahsasni, Dr. Nahed Nasser El-Sayed, Dr. Shatha Alaqeel ,

and Dr. Seham Al Terary

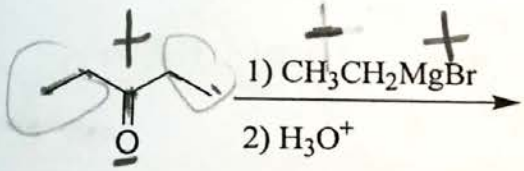
15. What **reagent** is needed to accomplish the following transformation?

A) $K_2Cr_2O_7$ B) $LiAlH_4$ C) $KMnO_4$ D) PCC

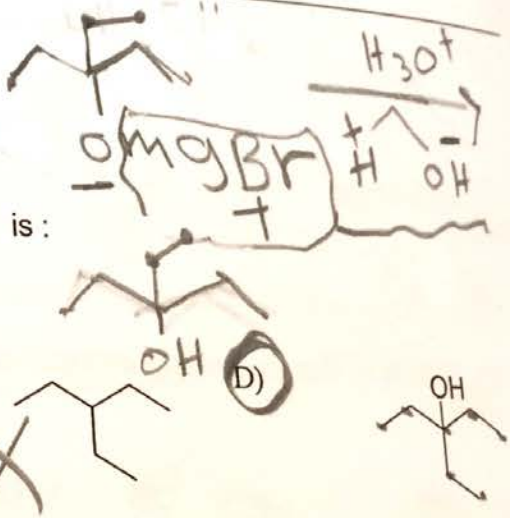
16. The **IUPAC name** for this compound  is:

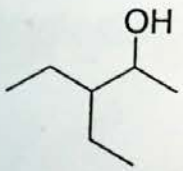
A) 6-Methy-8-nitro-non-6-en-3-ol
B) 4-Methy-2-nitro-non-3-en-7-ol
C) 8-Nitro-6-methy-non-6-en-3-ol
D) 2-Nitro-4-methy-non-3-en-7-ol

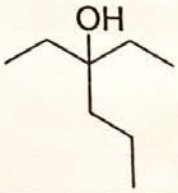
17. The **product** of the following reaction



is :



A) 

B) 

C)

D)

18. The compound with the **highest boiling point** is

A) Hexanol B) Dipropylether C) Hexane D) Hexyl bromide

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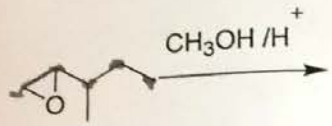
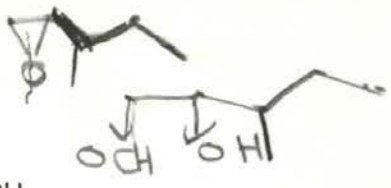
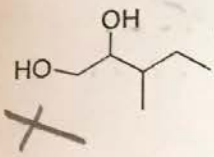
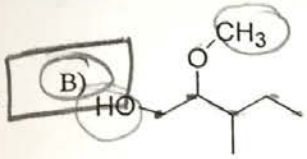
19. The **product** of the following reaction

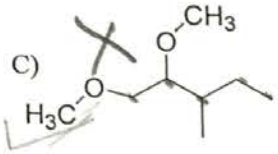


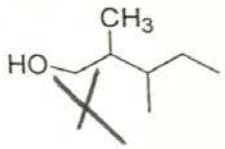
is :



A) 

B) 

C) 

D) 

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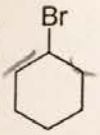
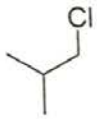
20. Which of the following structures is classified as **secondary alkyl halides**?

A) 

B) 

C) 

D) 

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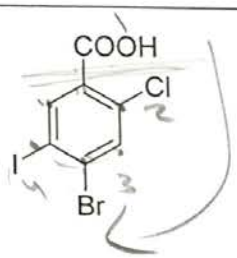
21. The **IUPAC name** for this compound



A) 4-Bromo-6-chloro-3-iodo-benzoic acid.

B) 4-Bromo-2-chloro-5-iodo-benzoic acid.

C) 1-Bromo-5-chloro-2-iodo-benzoic acid.

D) 3-Bromo-1-chloro-4-iodo-benzoic acid.

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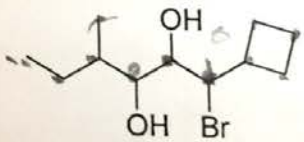
22. The **IUPAC name** for this compound



is :

A) 1-Bromo-1-cyclobutyl-4-methyl-hexan-2,3-diol

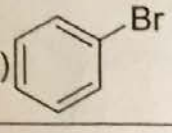
B) 6-Bromo-6-cyclobutyl-3-methyl-hexan-4,5-diol

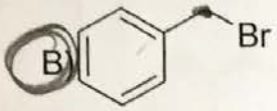
C) 5-Bromo-5-cyclobutyl-2-ethyl-pentan-3,4-diol

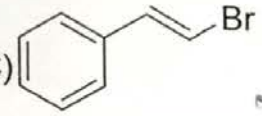
D) 1-Bromo-1-cyclobutyl-4-ethyl-pentan-2,3-diol

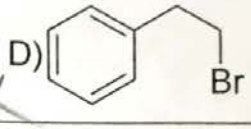
Scanned by CamScanner

23. Which of the following compounds is called **benzyl bromide**?

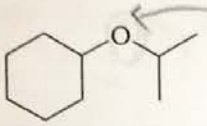
A) 

B) 

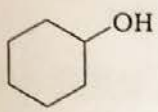
C) 

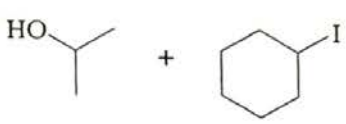
D) 

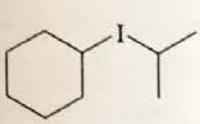
24. The **product** of the following reaction

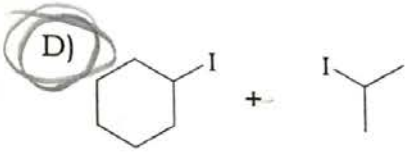


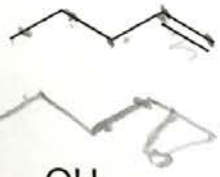
is :

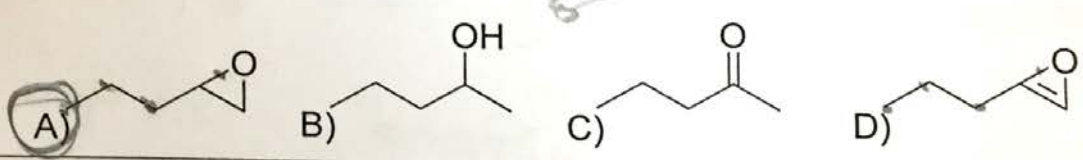
A) 

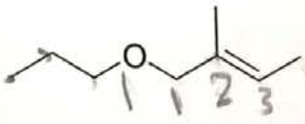
B) 

C) 

D) 

25. The following reaction  CH_3COOOH **gives**:



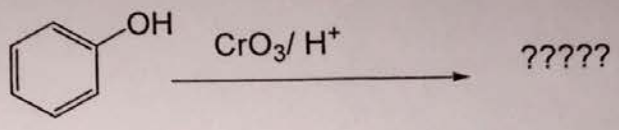
26. The **IUPAC name** of the structural formula 

is:

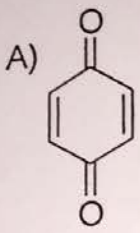
A) 3-Methyl-4-propoxy-but-2-ene.
B) 2-Methyl-1-propoxy-but-2-ene.
C) 2-Methyl-1-propyl-but-2-ene.
D) 3-Methyl-4-propyl-but-2-ene.

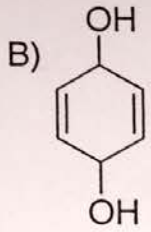
3 Propxy 2 methyl 2

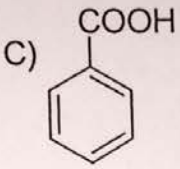
Scanned by CamScanner

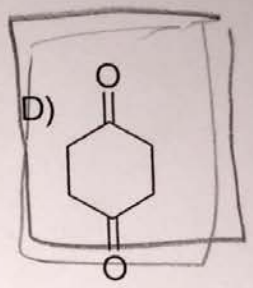
27. The following reaction 

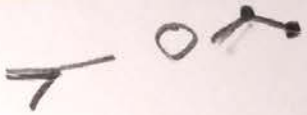
gives:

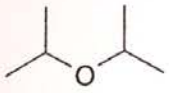
A) 

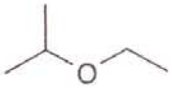
B) 

C) 

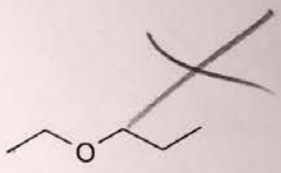
D) 

28. The structure of **ethyl isobutyl ether** is 

A) 

B) 

C) 

D) 

29. Which of the following structures is **Ethylene Oxide**?

A) 

B) 

C) 

D) 

30. Which one of the following compounds would have **highest solubility** in water?

A) 3-Methyl cyclohexanol
B) 1,2-cyclohexandiol
C) 3-Methoxy hexane
D) Iodocyclohexane

Best Regard

Scanned by CamScanner

King Saud University (The Preparatory Year)

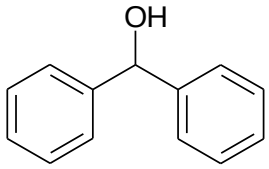
Chem.: 145	**Midterm II ***	**Time: 1 hour**

Name: ---------- St. No. (----------)

Group NO. (----------) Serial No.(----------)

I) for the following questions choose the correct name according to IUPAC rules:

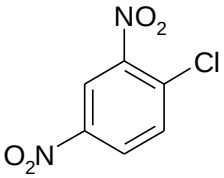
1-



a) Diphenylmethanol. b) Benzyl phenol.

c) Dibenzyl methanol. d) Benzyl phenyl alcohol.

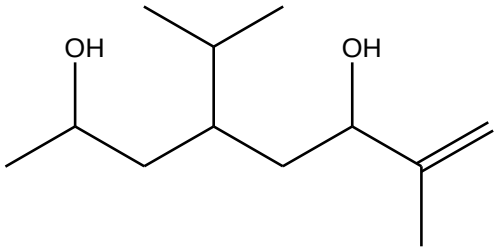
2-



a) 1-Chloro-2,4-diaminobenzene. b) 1,3-Dinitro-4-chlorobenzene.

c) 1-Chloro-2,4-dinitrobenzene. d) 1,3-Diamino-4-chlorobenzene.

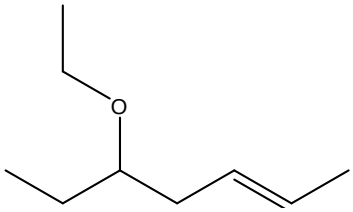
3-



a) 5-Isopropyl-2-methyl-1-octen-3,7-diol. b) 3-Isopropyl-1,6-dimethyl-6-hepten-1,5-diol.

c) 4-Isopropyl-7-methyl-7-octen-2,6-diol. d) 3,5-Diisopropyl-1-methylpentan-1,5-diol.

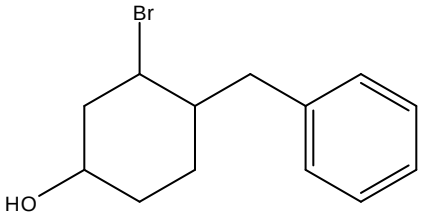
4-



a) 5-Ethoxy-2-heptene. b) Ethyl heptyl ether.

c) 3-Ethoxy-5-heptene. d) Heptenyloxyethane.

5-

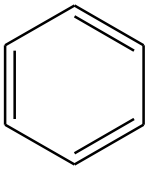


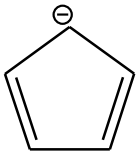
a) 1-Bromo-3-hydroxy-6-phenylcyclohexane. b) 1-Phenyl-2-bromo-4-cyclohexanol.

c) 1-Benzyl-2-bromo-4-hydroxycyclohexane. **d) 4-Benzyl-3-bromocyclohexanol.**

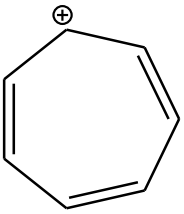
II) For the following questions choose the best answer

6. Which of the following is ***not*** aromatic?

a) 

b) 

c) 

d) 

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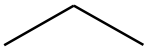
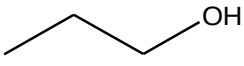
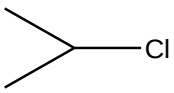
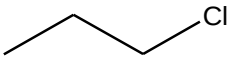
7. Which of the following compounds has the highest boiling point?

a) 

b) 

c) 

d) 

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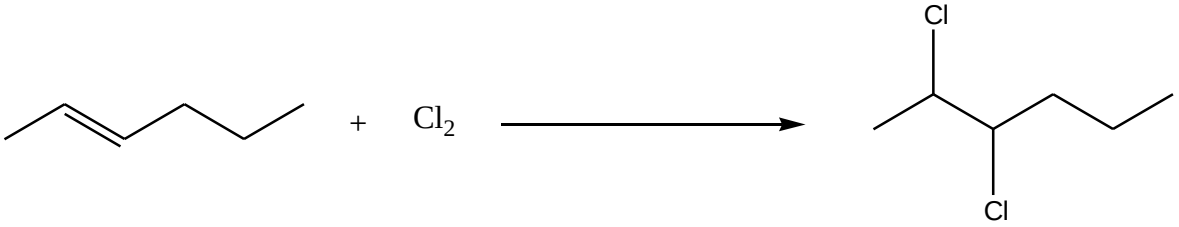
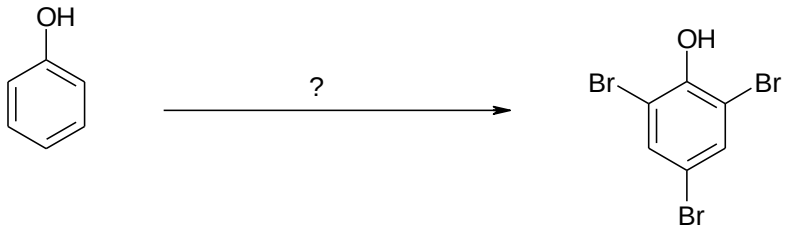
8. What are the correct conditions for this reaction?



a) CCl_4 b) UV light c) Heat d) $FeCl_3$

---

9. What are the right reagents and conditions for this reaction?



a) Br_2 / $FeBr_3$ b) Br_2 / $AlCl_3$ c) Br_2 / CCl_4 **d) Br_2 / H_2O**

---

10. How much is the resonance energy of benzene ring?

a) 36 Kcal. b) 76 Kcal. c) 46 Kcal. d) 56 Kcal.

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11. Which of the following compounds is the least soluble in water?

a) Propanetriol b) Propanol

c) Phenol. d) Propanediol

III) For the following structures choose the Common name:

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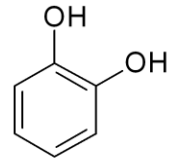
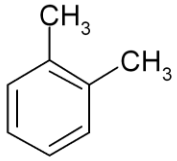
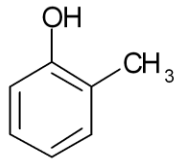
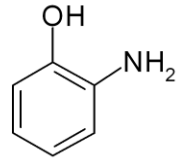
12. Which of the following is o-Cresol?

a) 

b) 

c) 

d) 

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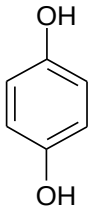
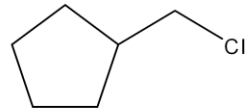
13. What is the common name of the following structure?



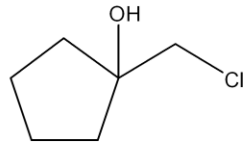
a) Catechol. b) Resorcinol. c) Pyrogallol. **d) Hydroquinone.**

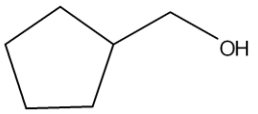
IV) For the following questions choose the major or the main product

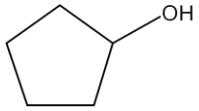
14.

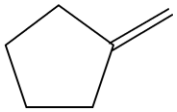


dil. KOH

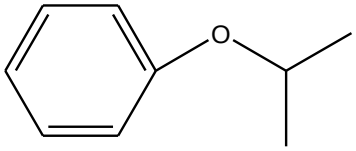
a) 

b) 

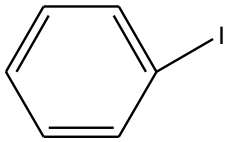
c) 

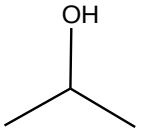
d) 

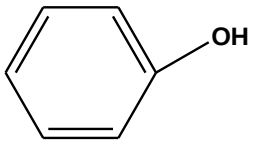
15.

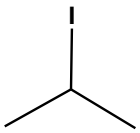


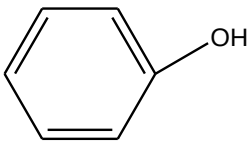
HI / H_2O / Heat

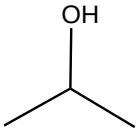
a) 

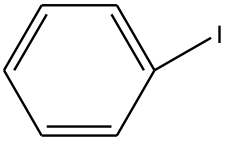
+ 

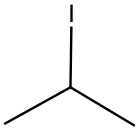
b) 

+ 

c) 

+ 

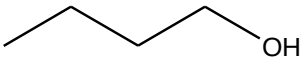
d) 

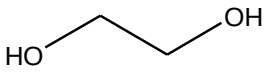
+ 

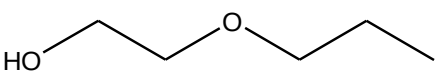
16.

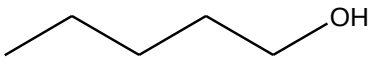
i) $CH_3CH_2CH_2MgBr$

ii) $\overset{\oplus}{H_3O}$

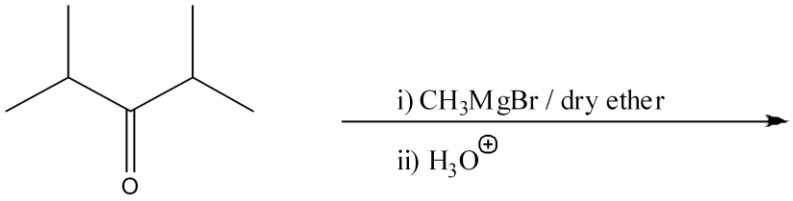
a) 

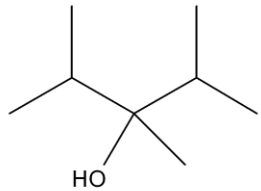
b) 

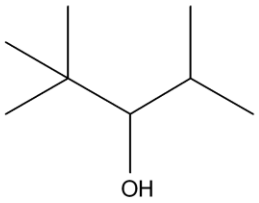
c) 

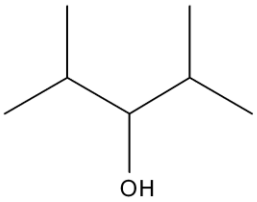
d) 

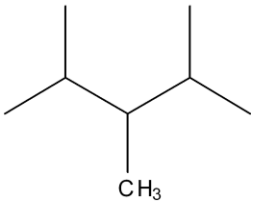
17.



a) 

b) 

c) 

d) 

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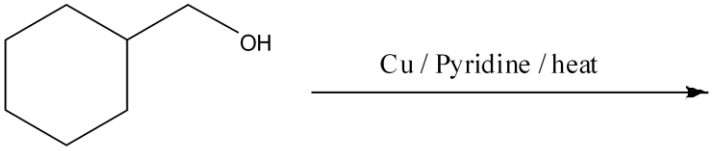
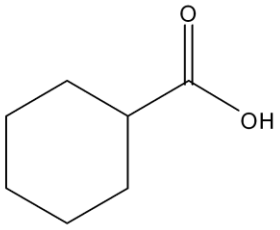
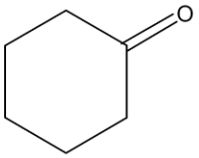
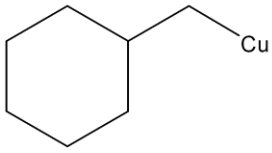
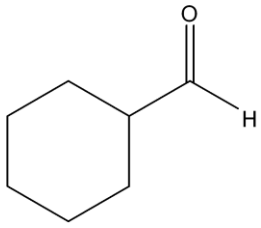


a) 

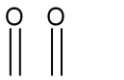
b) 

c) 

d) 

19.

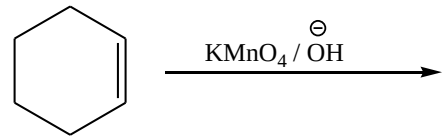
a) $CH_3CH_2OCH_3$

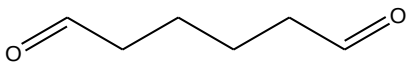
b) 

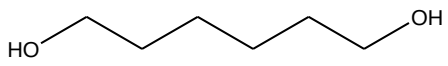
c) 

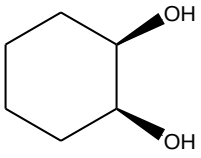
d) $CH_3CH_2COCH_3$

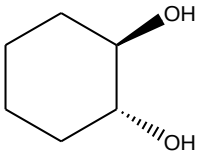
20.



a) 

b) 

c) 

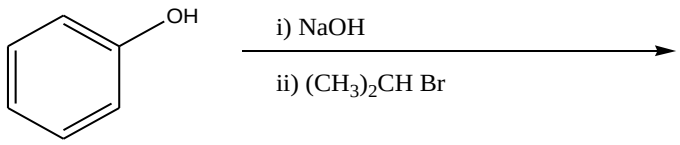
d) 

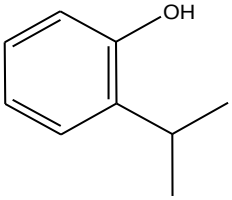
Bonus Questions:

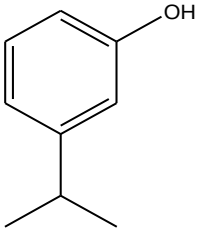
1. A C_8H_{10} hydrocarbon is nitrated by HNO_3 and sulfuric acid. Two $C_8H_9NO_2$ isomers are obtained. Which of the following fits this evidence?

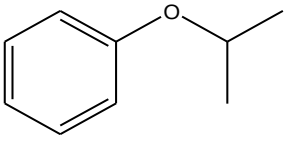
a) *para*-xylene. b) *ortho*-xylene. c) *meta*-xylene. **d) Ethylbenzene.**

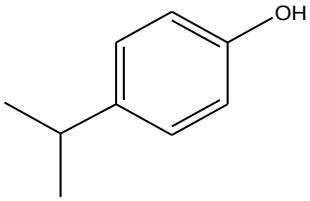
2. What is the major product of this 2 step reaction?



a) 

b) 

c) 

d) 

Best Wishes

Dr. Naked Elsayed, Dr. Siham Lahsasni, Dr. Noha Elnagdi

جامعة الملك سعود - كلية العلوم - قسم الكيمياء
(الاختبار الفصلي الثاني في مقرر 145 كيم (15-06-1435هـ الموافق (15-04-2014م)
(الفصل الدراسي الثاني 1434/1435هـ)   الزمن: ساعة ونصف
اسم الطالب: **Model Answer**   رقم الطالب:
رقم الشعبة: اسم المحاضر:

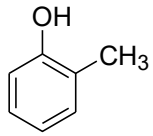
ملاحظة هامة: تصحح الاختبار آليا وبناء على الإجابات المكتوبة في الجدول أعلاه (حرف الإجابة الصحيحة) ولن ينظر إلى بقية الأوراق والتي تعتبر مسودة.

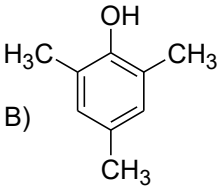
Answer Sheet*

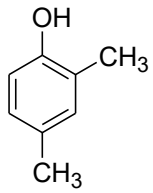
الإجابة	Question	الإجابة	Question
	18		1
	19		2
	20		3
	21		4
	22		5
	23		6
	24		7
	25		8
	26		9
	27		10
	28		11
	29		12
	30		13
			14
			15
			16
			17

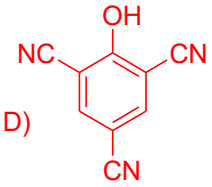
(I)Choose the correct answer for the following:

1. The **strongest acid** is:

A) 

B) 

C) 

D) 

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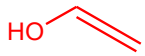
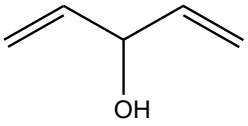
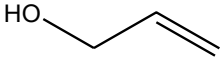
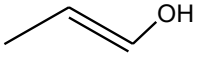
2. Which one from the following is an example of **vinyl alcohol?**

A) 

B) 

C) 

D) 

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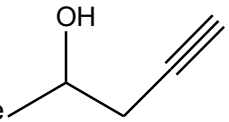
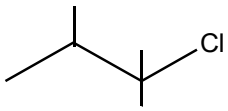
3. The IUPACname for the following structure 

is:

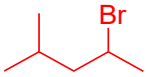
A) 1-Pentyne-4-ol
B) 4-Hydroxy-pent-1-yne
C) 4-Pentyne-2-ol
D) 2-Hydroxy-pent-4-yne

---

4. Which of the followingcompounds is a secondary **(2°) organic halide?**

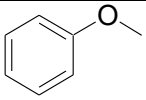
A) 

B)

C) 

D) CH_3I

---

5. The **common** name for this compound 

is:

A) Styrene
B) Anisol
C) Aniline
D) Toluene

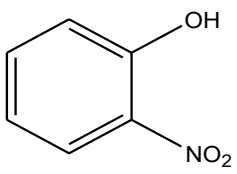
---

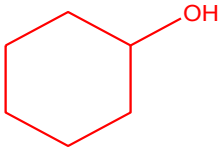
6. Which of the following compounds has the **lowestboiling point?**

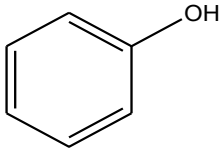
A) Pentane
B) Butyl methyl ether
C) Pentanol
D) Pentyl bromide

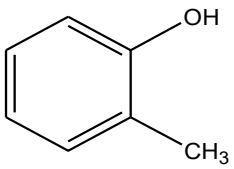
---

7. Which of the following compounds**will not react with (NaOH)**?

A) 

B) 

C) 

D) 

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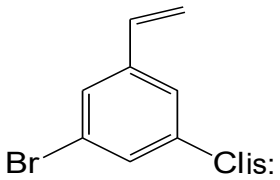
8. The correct **IUPAC** name for the following compound



A) *m*-Bromo-*m*-chloro styrene

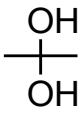
B) *m*-Chloro-*m*-bromostyrene

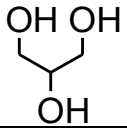
C) 3-Bromo-5-chloro styrene

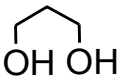
D) 5-Bromo-3-chloro styrene

9.Which of the following compounds can be considered as a **glycol?**

A) 

B) 

C) 

D) 

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10. The **boiling points** increase in the order of:

A) $CH_3Br < CH_3Cl < CH_3F < CH_3I$

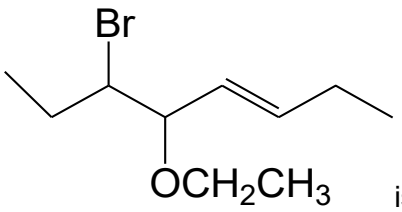
B)$CH_3F < CH_3Cl < CH_3Br < CH_3I$

C) $CH_3I < CH_3F < CH_3Cl < CH_3Br$

D)$CH_3Cl < CH_3Br < CH_3F < CH_3I$

---

11. The correct **IUPAC** name of the following compound



is:

A) 6-Bromo-5-ethoxy -3-octene

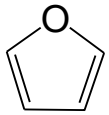
B) 3-Bromo-4-ethoxy-5-octene

C) 6-Bromo-6-ethyl-5-ethoxy-3-hexene

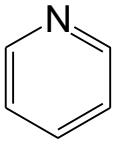
D) 1-Bromo-1-ethyl-2-ethoxy -3-hexene

---

12. Which of the following compounds is **not** aromatic?

A) 

B) 

C) 

D) 

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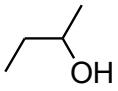
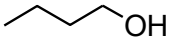
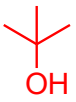
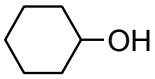
13. Which of the following compounds**can't react with CrO_3**?

A) 

B) 

C) 

D) 

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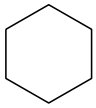
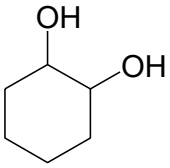
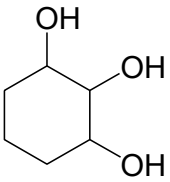
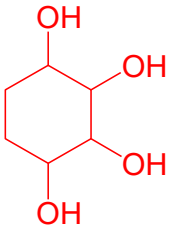
14. Which of the following compounds is the **most soluble** in water?

A) 

B) 

C) 

D) 

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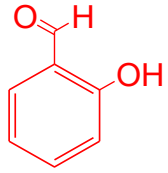
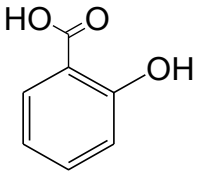
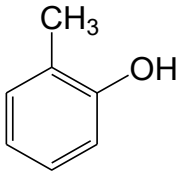
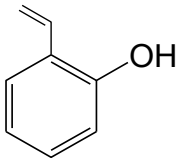
15. The correct structure of **Salicylaldehyde** is

A) 

B) 

C) 

D) 

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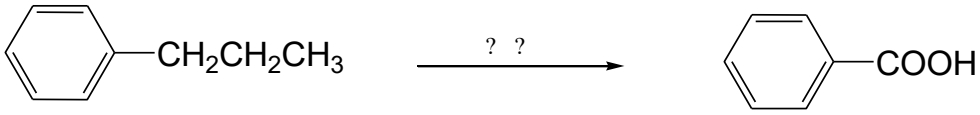
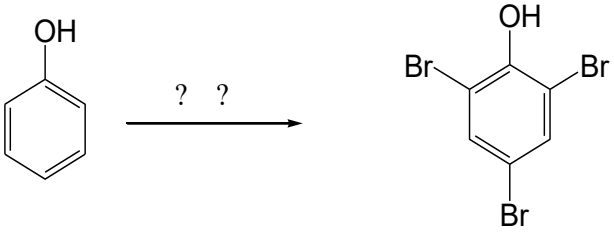
16. What is the correct **reagent** could be used in the following reaction?



A) O_3, then Zn,H_2O B) $KMnO_4$ C) $LiAlH_4$ D) H_2SO_4/SO_3

---

17. What is the correct **condition** for the following reaction?



A) Br_2 / $FeBr_3$ B) Br_2 / $AlCl_3$ C) Br_2 /CCl_4 D) Br_2 /H_2O

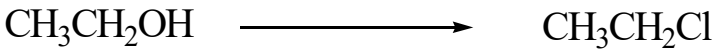
---

18. The **Bromine (-Br)** as a substituent on the benzene ring can be effected toward the electrophilic aromatic substitution reactions, as:

A) Activating and *O- / P-* director
B) Activating and *m-* director
C) Deactivating and *O- / P-* director
D) Deactivating and *m-* director

---

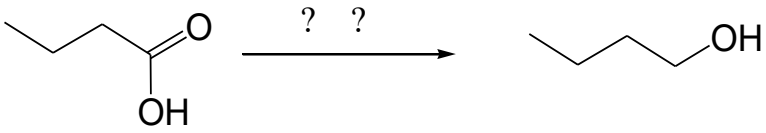
19. Whichis the correct **reagent** could be used in the following reaction?



A) Cl_2/ UV light B) $SOCl_2$ C) $Cl_2/FeCl_3$ D) CH_3MgCl

---

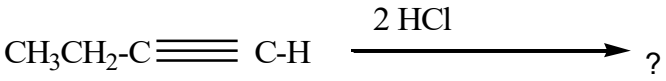
20. Which is the correct **reagent** for the following reaction?



A) $LiAlH_4$ B) H_2SO_4/SO_3 C) $KMnO_4$ D) KOH

II) Choose the major product of the following reactions

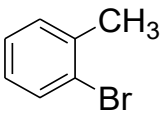
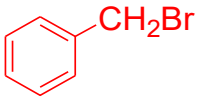
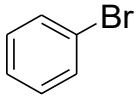
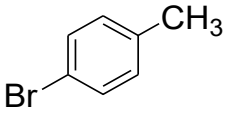
21.



A) 1,2-Dichlorobutane
B) 1,4-Dichlorobutane
C) 1,1-Dichlorobutane
D) 2,2-Dichlorobutane

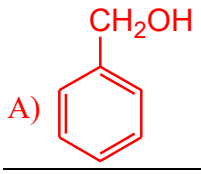
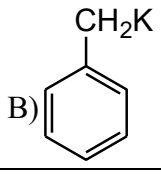
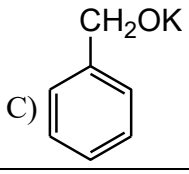
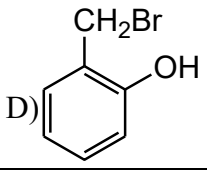
22.

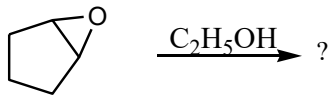
?

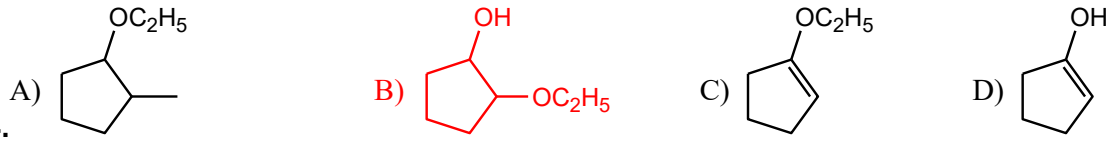
A) 
B) 
C) 
D) 

23.

?

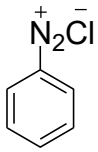









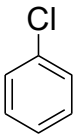
24.

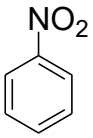
25.

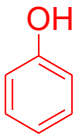


H_3O^+ / Heat → ?

A) 

B) 

C) 

D) 

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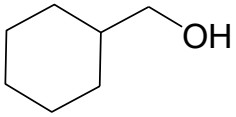
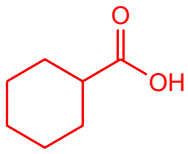
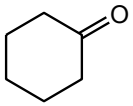
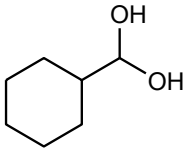
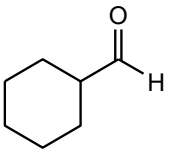


$KMnO_4$ → ?

A) 

B) 

C) 

D) 

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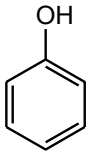
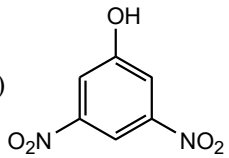
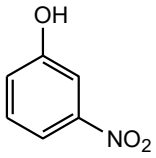
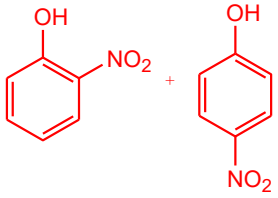
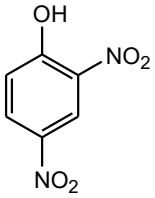


H_2SO_4/HNO_3 → ?

A) 

B) 

C) 

D) 

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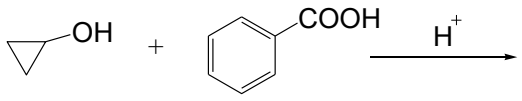
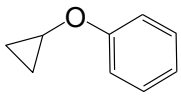
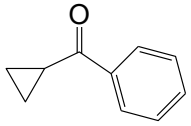
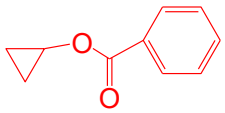
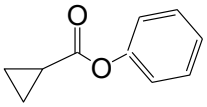


A) 

B) 

C) 

D) 

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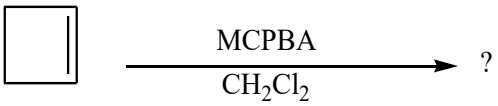
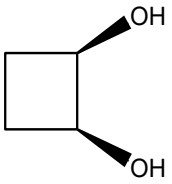
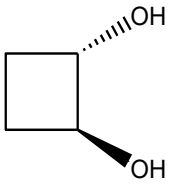
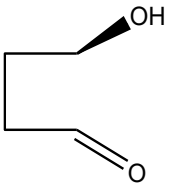
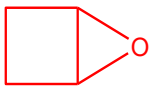


is:

A) 

B) 

C) 

D) 

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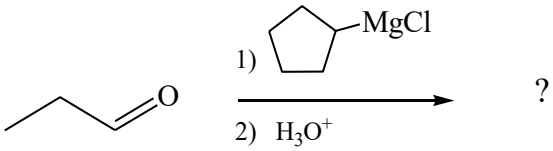
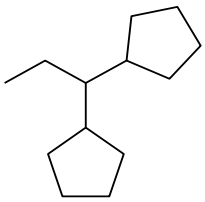
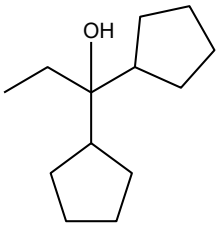
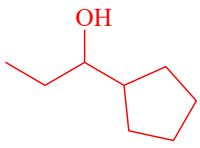


A) 

B) 

C) 

D)

Best Wishes

King Saud University

College of Science

Chemistry Department

Second Midterm Exam, Chem145.

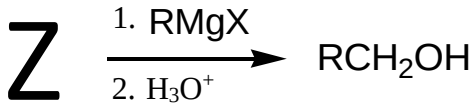
Time Allowed 1.5 hour **(2-7-1435 H)**

Student name:
Student number:

ملاحظة هامة: **ستكون الإجابة الصحيحة بناء علي الإجابة المكتوبة في الجدول أدناه**

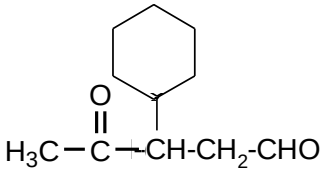
رقم السؤال	الإجابة	رقم السؤال	الإجابة
1		16	
2		17	
3		18	
4		19	
5		20	
6		21	
7		22	
8		23	
9		24	
10		25	
11		26	
12		27	
13		28	
14		29	
15		30	

1) In the following general equation, the reagent (Z) must be



A)Formaldehyde B) Acetaldehyde C) Acetone D) Methanol

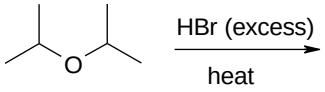
2) What is the correct name of the following compound?

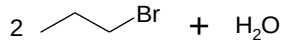


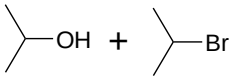
A) 3-Cyclohexyl-4-oxopentanal B)3-Cyclohexyl-4-ketopentanal

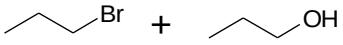
C) 3-Cyclohexyl-4-one-1-pentanal D) 3-Cyclohexyl-2-oxo-5-pentanal

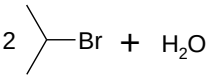
3) Predict the products of the following reaction



A) 

B) 

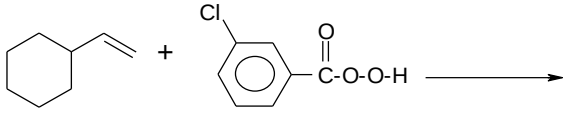
C) 

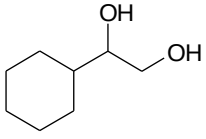
D) 

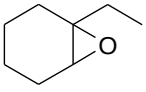
4) Oxidation of secondary alcohol yields

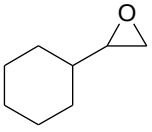
A) Aldehyde B) Epoxide C)Ketone D) Carboxylic acid

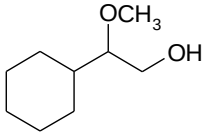
5) What is the product of the following reaction?

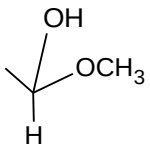


A) 

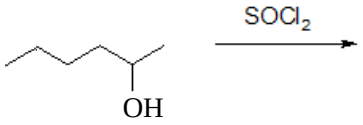
B) 

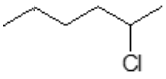
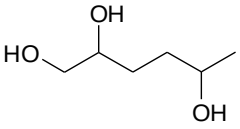
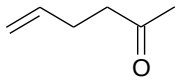
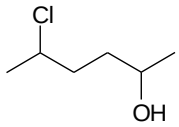
C) 

D) 

6) The structure  **is**

A) Hemiketal B) Acetal C) Ketal D)Hemiacetal

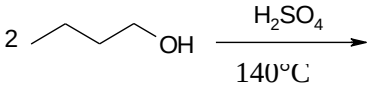
7) The resulting product from the reaction  **is**

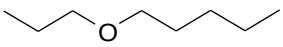
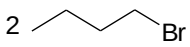
A)  B)  C)  D) 

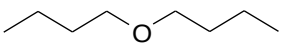
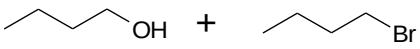
8)Which of the following statement about compounds (1) and (2) is false?

A) (1) and (2) are isomers B) (1) has higher boiling point than (2)

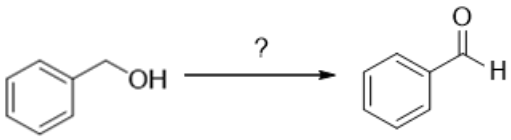
C) (1) can be easily oxidized than (2) D) (1) is less soluble in water than (2)

9) What is the product of the following reaction? 

A)  B) 

C)  D) 

10) What reagent is needed to accomplish the following transformation?



A) PCC B) $KMnO_4$

C) $LiAlH_4$ D) $K_2Cr_2O_7$

11) Ozonolysis of 2-methyl-2-butene results in the formation of

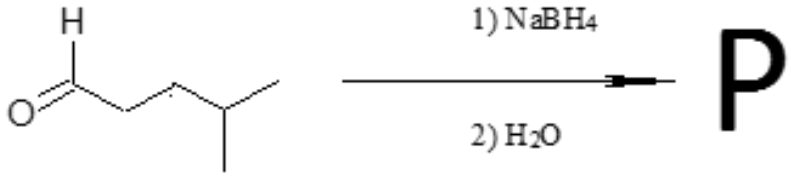
A) Two aldehydes

B) Two ketones

C) Dialdehyde

D)One aldehyde and one ketone

12) What is the product (P) of the following reaction?



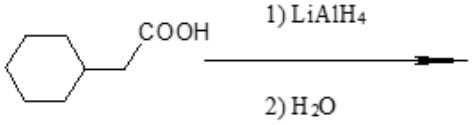
A) 4-Methylpentane

B) 4-Methyl-2-pentene

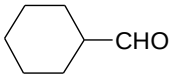
C) 2-Methylpentane

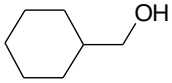
D) 4-Methyl-1-pentanol

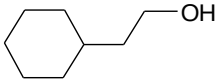
13) The reaction

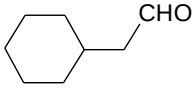


gives

A) 

B) 

C) 

D) 

14)Which of the following statements about aldehydes is false?

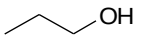
A) Can be formed by oxidation of primary alcohol

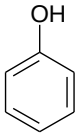
B) Can react with ammonia

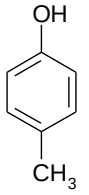
C) Can be oxidized to carboxylic acid

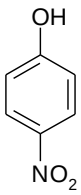
D) Can react with ketone to give acetal

15) The most acidic compound is

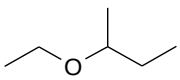
A) 

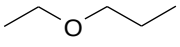
B) 

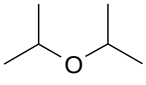
C) 

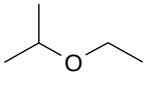
D) 

16) The structure of ethyl isopropyl ether is

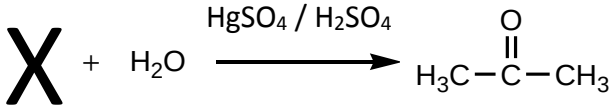
A) 

B) 

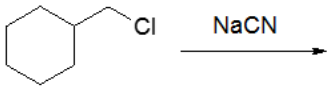
C) 

D) 

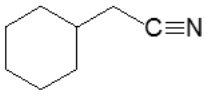
17) What is the starting material (X) used in the following reaction?

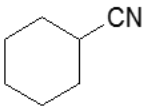


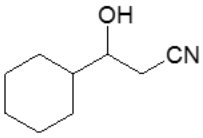
A) 1-propanol B)Propyne C) 2-propanol D) Propene

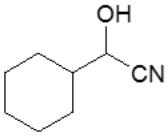
18) The product of the following reaction 

is

A) 

B) 

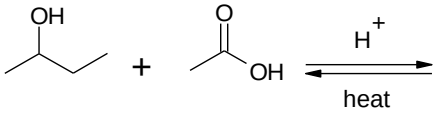
C) 

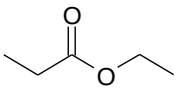
D) 

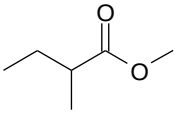
19) Methyl vinyl ketone is the common name of

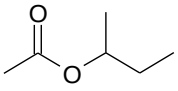
A)3-Buten-2-one B) 1-Buten-3-one

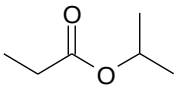
C) 1-Buten-2-one D) 2-Buten-3-one

20) What is the product formed in the following reaction? 

A) 

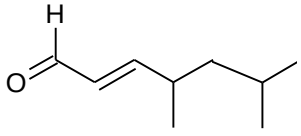
B) 

C) 

D) 

21) Nucleophilic addition of ammonia to aldehydes and ketones results in the formation of

A) Hydrazone B) Hydrazine C) Oxime D)Imine

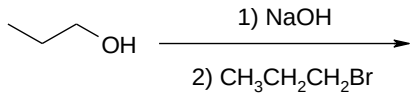
22) The correct IUPAC name of the following structure 

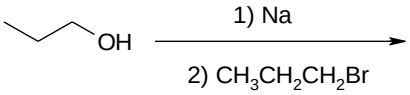
is

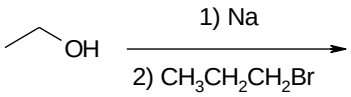
A)2,4-Dimethyl-5-heptanal B) 2,4-Dimethyl-5-heptenal

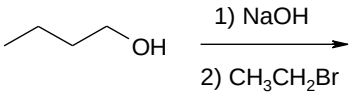
C) 5-Isopropyl-4-methyl-2-pentenal D) 4,6-Dimethyl-2-heptenal

23) Which one of the following reactions gives propyl ethyl ether?

A) 

B) 

C) 

D) 

24) Two molecules (X, Y) have the same chemical formula C_2H_6O but the boiling point of X is higher than Y, So the compound Y is

A) Ethanol B) Ethanal C) Methoxy methane D) Ethene

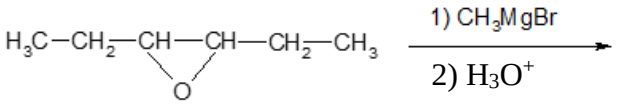
25) Which of the following compounds is a cyanohydrin?

A) B) C) D)

26)The carbonyl-O-atom in aldehydes and ketones can be attacked by

A) Anion B) Nucleophile

C) Electrophile D) O-atom of water

27) The following reaction 

yields

A)3-Methyl-4-hexanol B) 4-Methyl-3-hexanol

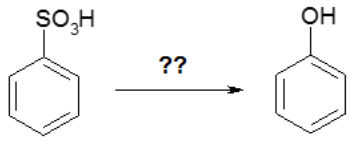
C) 4-Ethyl-3-hexanol D) 4-Methoxy-3-hexanol

28)Which functional group is <u>not present</u> in the following structure?

A) Tertiary alcohol B) Trichloromethyl group

C) Hemiacetal D) Hemiketal

29) What reagent is needed to accomplish the following transformation?



A) $Na_2Cr_2O_7$/heat / H_3O^+

B) NaOH /heat / H_3O^+

C) $KMnO_4$ / H_3O^+

D) Na /heat / H_3O^+

30) Which of the following compounds <u>can not</u> be classified as a secondary halide?

A) Isopropyl bromide

B) Cyclohexyl iodide

C) 2-Bromobutane

D) 1-Chloro-1-isopropylcyclopentane

King Saud University

College of Science

Chemistry Department

Second Midterm Exam, Chem 145.

Time Allowed 1.5 hour **(2-7-1435 H)**

Student name:
Student number:

ملاحظة هامة: يتكون الاختبار من 30 سؤال اختيار من متعدد، أجب عن جميع الأسئلة في الجدول أدناه

رقم السؤال	الإجابة	رقم السؤال	الإجابة
1	A	16	D
2	A	17	B
3	D	18	A
4	C	19	A
5	C	20	C
6	D	21	D
7	A	22	D
8	D	23	C
9	C	24	C
10	A	25	C
11	D	26	C
12	D	27	B
13	C	28	D
14	D	29	B
15	D	30	D

King Saud University

College of Science

Chemistry Department

Second Midterm Exam, Chem 145.

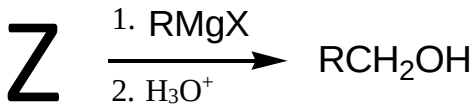
Time Allowed 1.5 hour **(2-7-1435)**

Student name:
Student number:

ملاحظة هامة: ستكون الإجابة الصحيحة بناء علي الإجابة المكتوبة في الجدول أدناه

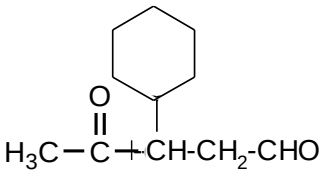
رقم السؤال	الإجابة	رقم السؤال	الإجابة
1	C	16	B
2	C	17	C
3	C	18	C
4	A	19	D
5	D	20	D
6	A	21	A
7	D	22	A
8	A	23	D
9	D	24	B
10	D	25	B
11	B	26	B
12	C	27	D
13	D	28	A
14	C	29	C
15	B	30	A

1) In the following general equation, the reagent (Z) must be



A)Acetone B)Methanol C) Formaldehyde D) Acetaldehyde

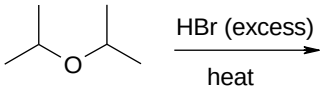
2) What is the correct name of the following compound?

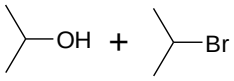


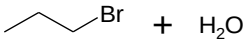
A) 3-Cyclohexyl-4-one-1-pentanal B) 3-Cyclohexyl-2-oxo-5-pentanal

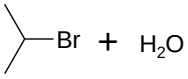
C)3-Cyclohexyl-4-oxopentanal D)3-Cyclohexyl-4-ketopentanal

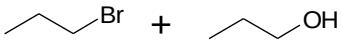
3) Predict the products of the following reaction



A) 

B) 

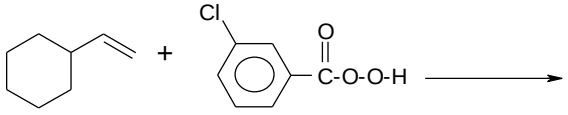
C) 

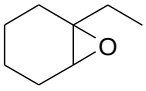
D) 

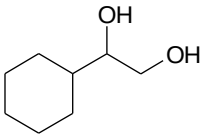
4) Oxidation of secondary alcohol yields

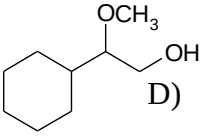
A)Ketone B) Carboxylic acid C) Aldehyde D) Epoxide

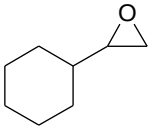
5) What is the product of the following reaction? D

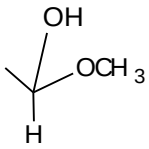


A) 

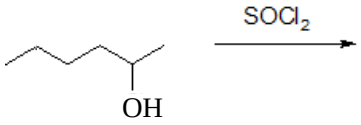
B) 

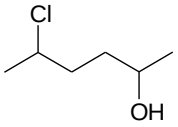
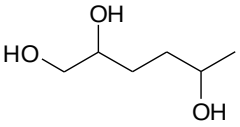
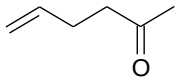
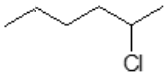
C) 

D) 

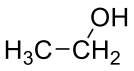
6) The structure  **is**

A) Hemiacetal B) Ketal C) Acetal D) Hemiketal

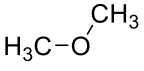
7) The resulting product from the reaction  **is**

A)  B)  C)  D) 

8)Which of the following statement about compounds (1) and (2) is false?



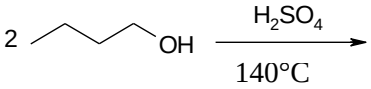
(1)

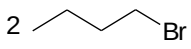
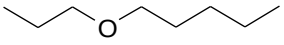


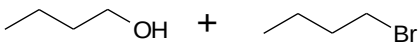
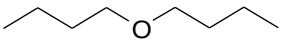
(2)

A) (1) is less soluble in water than (2) B) (1) can be easily oxidized than (2)

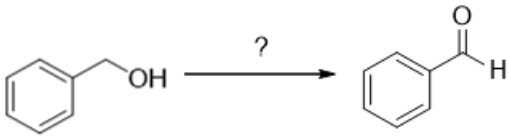
C) (1) has higher boiling point than (2) D) (1) and (2) are isomers

9) What is the product of the following reaction? 

A)  B) 

C)  D) 

10) What reagent is needed to accomplish the following transformation?



A) $K_2Cr_2O_7$ B) $LiAlH_4$

C) $KMnO_4$ D) PCC

11) Ozonolysis of 2-methyl-2-butene results in the formation of

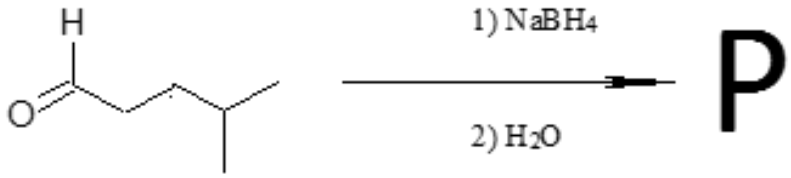
A) Dialdehyde

B)One aldehyde and one ketone

C) Two aldehydes

D) Two ketones

12) What is the product (P) of the following reaction?



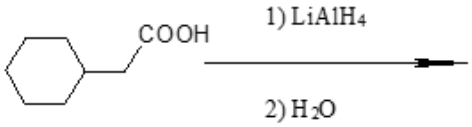
A) 4-Methylpentane

B) 2-Methylpentane

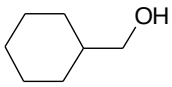
C) 4-Methyl-1-pentanol

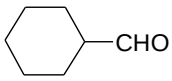
D) 4-Methyl-2-pentene

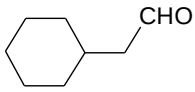
13) The reaction

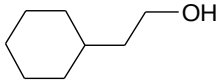


gives

A) 

B) 

C) 

D) 

14)Which of the following statements about aldehydes is false?

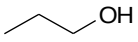
A) Can react with ammonia

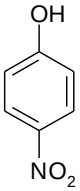
B)Can be formed by oxidation of primary alcohol

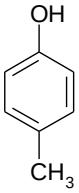
C) Can react with ketone to give acetal

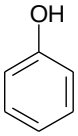
D) Can be oxidized to carboxylic acid

15) The most acidic compound is

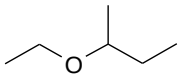
A) 

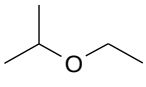
B) 

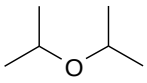
C) 

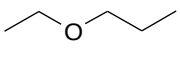
D) 

16) The structure of ethyl isopropyl ether is

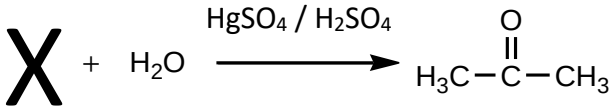
A) 

B) 

C) 

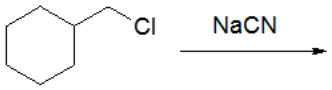
D) 

17) What is the starting material (X) used in the following reaction?

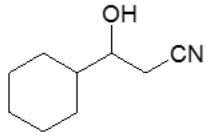


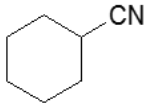
A) Propene B) 2-propanol C)Propyne D) 1-propanol

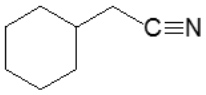
18) The product of the following reaction

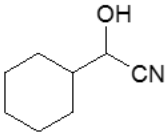


is

A) 

B) 

C) 

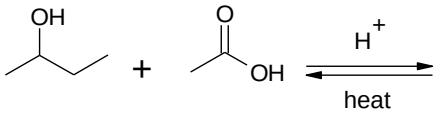
D) 

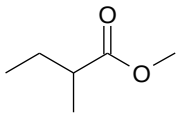
19) Methyl vinyl ketone is the common name of

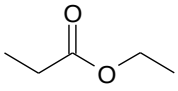
A) 2-Buten-3-one B) 1-Buten-2-one

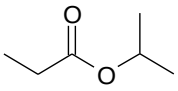
C) 1-Buten-3-one D)3-Buten-2-one

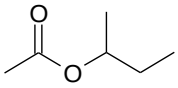
20) What is the product formed in the following reaction?



A) 

B) 

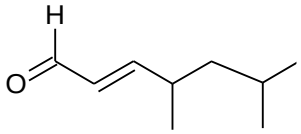
C) 

D) 

21) Nucleophilic addition of ammonia to aldehydes and ketones results in the formation of

A)Imine B) Oxime C) Hydrazine D) Hydrazone

22) The correct IUPAC name of the following structure

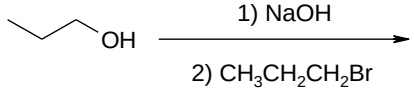


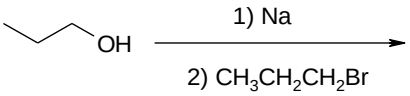
is

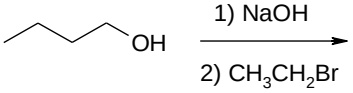
A) 4,6-Dimethyl-2-heptenal B)5-Isopropyl-4-methyl-2-pentenal

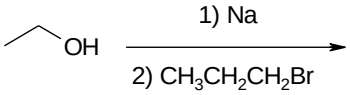
C) 2,4-Dimethyl-5-heptanal D) 2,4-Dimethyl-5-heptenal

23) Which one of the following reactions gives propyl ethyl ether?

A) 

B) 

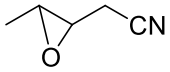
C) 

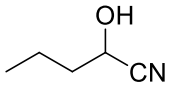
D) 

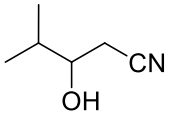
24) Two molecules (X, Y) have the same chemical formula C_2H_6O but the boiling point of X is higher than Y, So the compound Y is

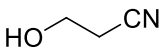
A) Ethene B) Methoxy methane C) Ethanal D) Ethanol

25) Which of the following compounds is a cyanohydrin?

A) 

B) 

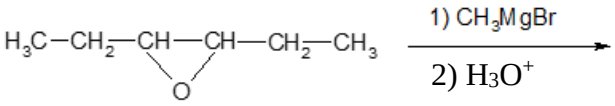
C) 

D) 

26)The carbonyl-O-atom in aldehydes and ketones can be attacked by

A) O-atom of water B) Electrophile

C) Nucleophile D) Anion

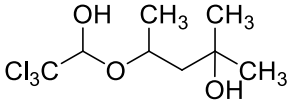
27) The following reaction 

yields

A)3-Methyl-4-hexanol B)4-Ethyl-3-hexanol

C)4-Methoxy-3-hexanol D)4-Methyl-3-hexanol

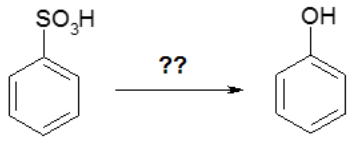
28)Which functional group is <u>not present</u> in the following structure?



A) Hemiketal B) Hemiacetal

C) Trichloromethyl group D) Tertiary alcohol

29) What reagent is needed to accomplish the following transformation?



A) Na /heat / H_3O^+

B)$KMnO_4$ / H_3O^+

C) NaOH /heat / H_3O^+

D) $Na_2Cr_2O_7$/heat / H_3O^+

30) Which of the following compounds <u>can not</u> be classified as a secondary halide?

A) 1-Chloro-1-isopropylcyclopentane

B) 2-Bromobutane

C) Cyclohexyl iodide

D)Isopropyl bromide

King Saud University

College of Science

Chemistry Department

Second Midterm Exam, Chem 145.

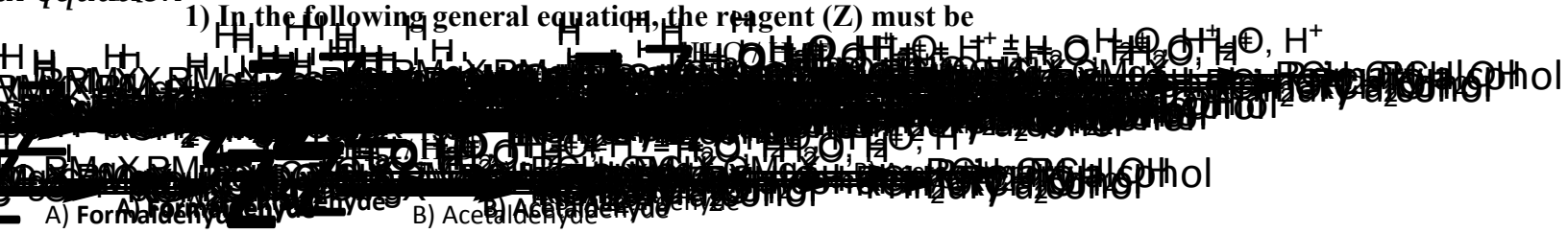
Time Allowed 1.5 hour **(2-7-1435)**

Student name:
Student number:

ملاحظة هامة: يتكون الاختبار من 30 سؤال اختيار من متعدد، أجب عن جميع الأسئلة في الجدول أدناه

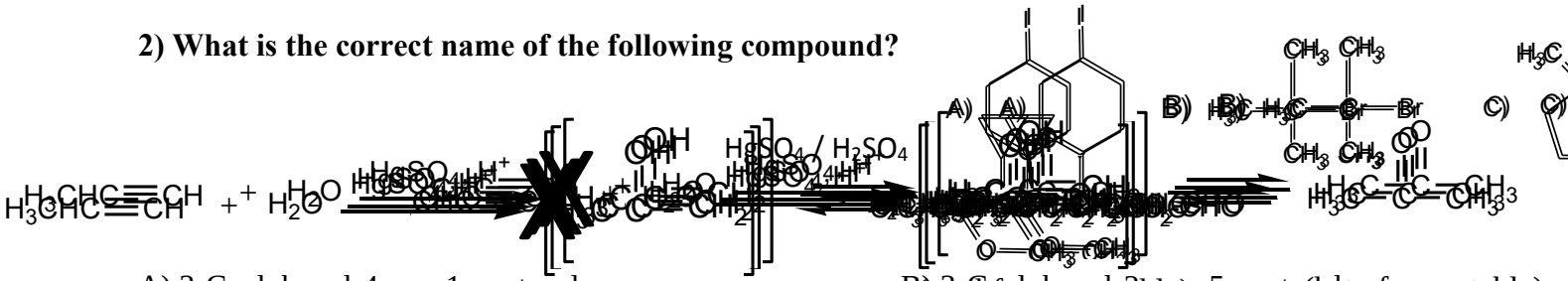
رقم السؤال	الإجابة	رقم السؤال	الإجابة
1	C	16	B
2	C	17	C
3	C	18	C
4	A	19	D
5	D	20	D
6	A	21	A
7	D	22	A
8	A	23	D
9	D	24	B
10	D	25	B
11	B	26	B
12	C	27	D
13	D	28	A
14	C	29	C
15	B	30	A

1) In the following general equation, the reagent (Z) must be



A)Acetone B)Methanol C) Formaldehyde D) Acetaldehyde

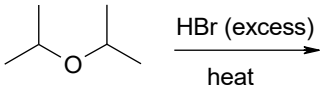
2) What is the correct name of the following compound?

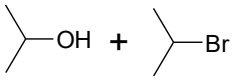


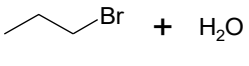
A) 3-Cyclohexyl-4-one-1-pentanal B)3-Cyclohexyl-4-oxo-5-pentanal

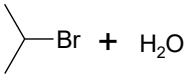
C)3-Cyclohexyl-4-oxopentanal D)3-Cyclohexyl-4-ketopentanal

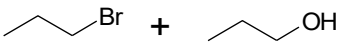
3) Predict the products of the following reaction



A) 

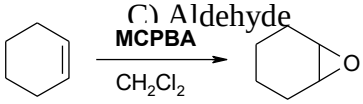
B) 

C) 

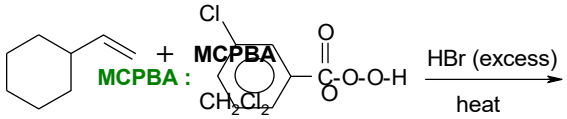
D) 

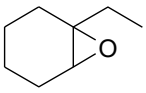
4) Oxidation of secondary alcohol yields

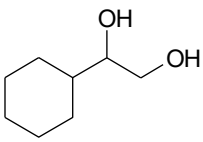
A)Ketone B) Carboxylic acid C) Aldehyde D) Epoxide

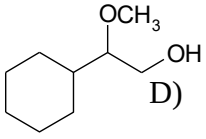


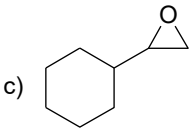
5) What is the product of the following reaction?

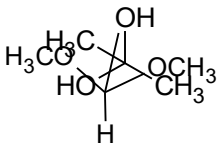


A) 

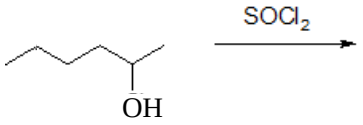
B) 

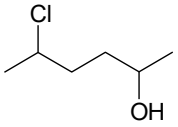
C) 

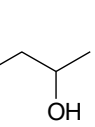
D) 

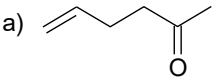
6) The structure  **is**

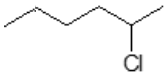
A) Hemiacetal B) Ketal C) Acetal D) Hemiketal

7) The resulting product from the reaction  **is**

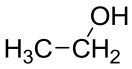
A) 

B) 

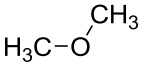
C) 

D) 

8)Which of the following statement about compounds (1) and (2) is false?



(1)



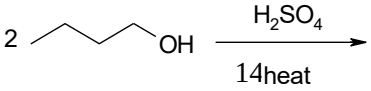
(2)

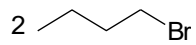
A) (1) is less soluble in water than (2)

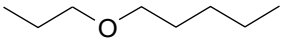
B) (1) can be easily oxidized than (2)

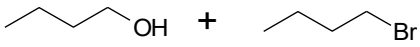
C) (1) has higher boiling point than (2)

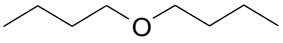
D) (1) and (2) are isomers

9) What is the product of the following reaction? 

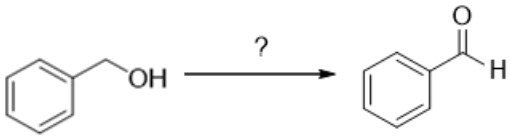
A) 

B) 

C) 

D) 

10) What reagent is needed to accomplish the following transformation?



A) $K_2Cr_2O_7$

B) $LiAlH_4$

C) $KMnO_4$

D) PCC

11) Ozonolysis of 2-methyl-2-butene results in the formation of

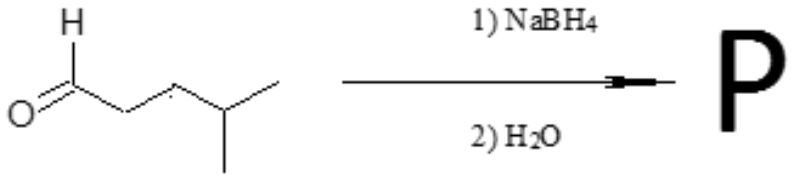
A) Dialdehyde

B)One aldehyde and one ketone

C) Two aldehydes

D) Two ketones

12) What is the product (P) of the following reaction?



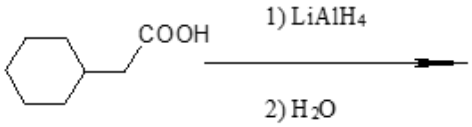
A) 4-Methylpentane

B) 2-Methylpentane

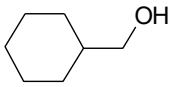
C) 4-Methyl-1-pentanol

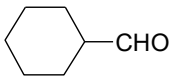
D) 4-Methyl-2-pentene

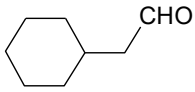
13) The reaction

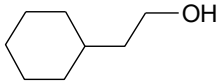


gives

A) c) 

B) d) 

C) a) 

D) b) 

14)Which of the following statements about aldehydes is false?

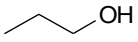
A) Can react with ammonia

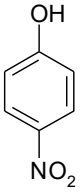
B)Can be formed by oxidation of primary alcohol

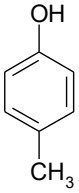
C) Can react with ketone to give acetal

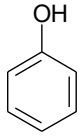
D) Can be oxidized to carboxylic acid

15) The most acidic compound is

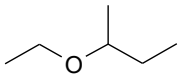
A) d) 

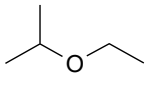
B) a) 

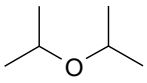
C) b) 

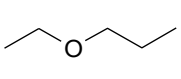
D) c) 

16) The structure of ethyl isopropyl ether is

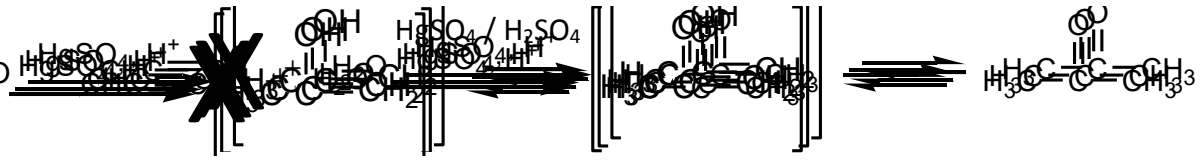
A) c) 

B) b) 

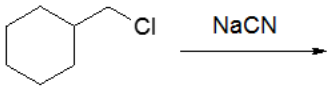
C) a) 

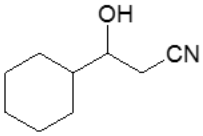
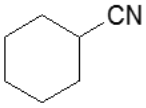
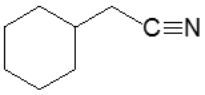
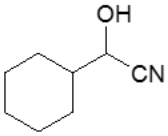
D) d) 

17) What is the starting material (X) used in the following reaction?



A) Propene B) 2-propanol C)Propyne D) 1-propanol

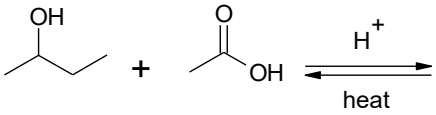
18) The product of the following reaction  **is**

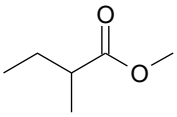
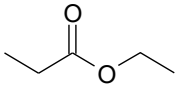
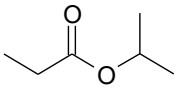
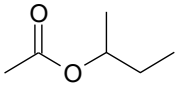
A)  B)  C)  D) 

19) Methyl vinyl ketone is the common name of

A) 2-Buten-3-one B) 1-Buten-2-one

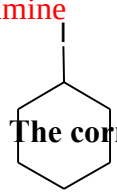
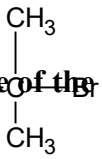
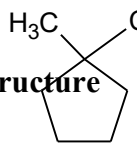
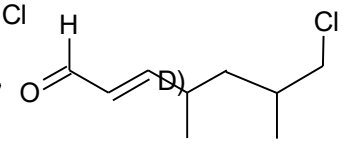
C) 1-Buten-3-one D)3-Buten-2-one

20) What is the product formed in the following reaction? 

A)d)  B)c)  C) b)  D)a) 

21) Nucleophilic addition of ammonia to aldehydes and ketones results in the formation of

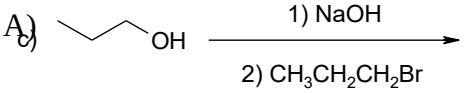
A)Imine B) Oxime C) Hydrazine D) Hydrazone

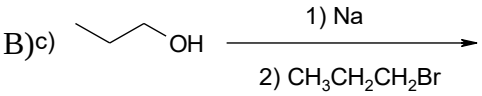
22) The correct IUPAC name of the following structure A)  B)  C)  D)  **is**

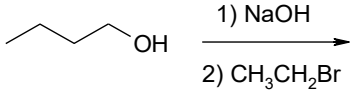
A) 4,6-Dimethyl-2-heptenal B)5-Isopropyl-4-methyl-2-pentenal

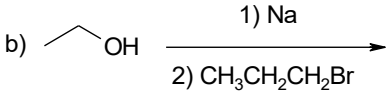
C) 2,4-Dimethyl-5-heptanal D) 2,4-Dimethyl-5-heptenal

23) Which one of the following reactions gives propyl ethyl ether?

A) 

B) 

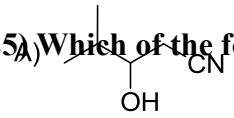
C) 

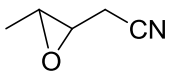
D) 

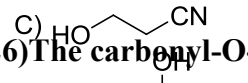
24) Two molecules (X, Y) have the same chemical formula C_2H_6O but the boiling point of X is higher than Y, So the compound Y is

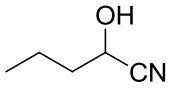
A) Ethene B) Methoxy methane C) Ethanal D) Ethanol

25) Which of the following compounds is a cyanohydrin?

A) 

B) 

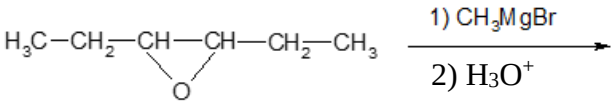
C) 

D) 

26) The carbonyl-O-atom in aldehydes and ketones can be attacked by

A) O-atom of water B) Electrophile

C) Nucleophile D) Anion

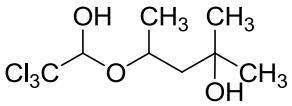
27) The following reaction 

yields

A)3-Methyl-4-hexanol B)4-Ethyl-3-hexanol

C)4-Methoxy-3-hexanol D)4-Methyl-3-hexanol

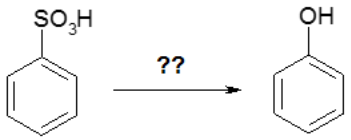
28)Which functional group is <u>not present</u> in the following structure?



A) Hemiketal B) Hemiacetal

C) Trichloromethyl group D) Tertiary alcohol

29) What reagent is needed to accomplish the following transformation?



A) Na /heat / H_3O^+

B)$KMnO_4$ / H_3O^+

C) NaOH /heat / H_3O^+

D) $Na_2Cr_2O_7$/heat / H_3O^+

30) Which of the following compounds <u>can not</u> be classified as a secondary halide?

A) 1-Chloro-1-isopropylcyclopentane

B) 2-Bromobutane

C) Cyclohexyl iodide

D)Isopropyl bromide

هام جدًا هذا النموذج

King Saud University (The Preparatory Year)

Exam 2012

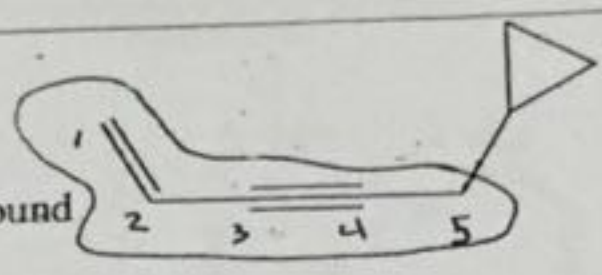
2nd Term 1432 / 1433

Chem.: 145 Midterm Exam I * Time: 1 hour

Name: ---------- St. No. (----------)

Group NO. (----------) Serial No.(----------)

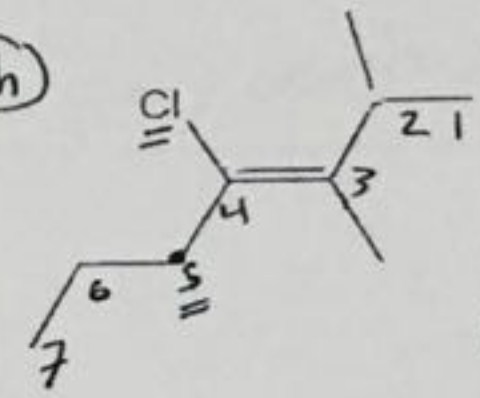
I) Choose the correct answer for the following:

1- The IUPAC name for the following compound  is: ii

i. Pent-4-en-2-yne-cyclopropane.
ii. 5-Cyclopropylpent-1-en-3-yne.
iii. 1-Cyclopropylpent-4-en-2-yne.
iv. Propyne vinyl-cyclopropane.

نأخذ أطول سلسلة تحوي الرابطتين معاً
ونرقم لتعطي الروابط أقل الأرقام

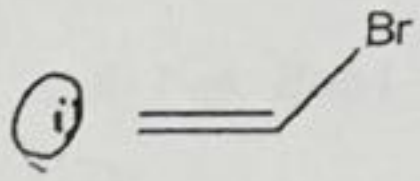
(h) (h)



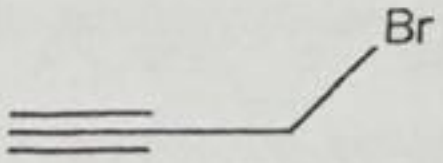
2- The IUPAC name for the following compound is: iv

i. (*Z*)-3-Chloro-2-isopropyl- hex-2-ene.
ii. (*E*)-4-Chloro-2,3-dimethyl hept-3-ene.
iii. (*E*)-3-Chloro-2-isopropyl- hex-2-ene.
iv. (*Z*)-4-Chloro-2,3-dimethylhept-3-ene.

3- The structure of vinyl bromide is: i)

i) 

ii)

iii) 

iv) 

$CH_2 = CH -$

Vinyl

رابطة ثنائية على الطرف

وتتألف من 2C

Circle

1.

Chem. 106 Exam
Model A

Mid - 1

1. Hybridization of the C* marked is:

a) SP^3 b) SP^2 c) SP d) S

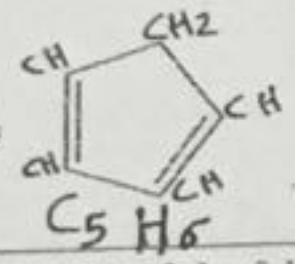
2. Which of the following compounds contain secondary C-atom?

a) CH_4 b) $CH_3-\underset{\underset{CH_3}{|}}{CH}-CH_3$ c) CH_3-CH_3 d) $CH_3-CH_2-CH_3$

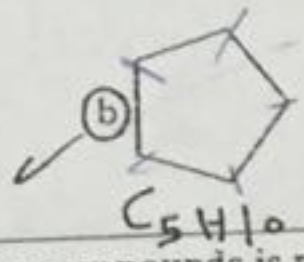
3. The bond length between C=C in this structure $CH_3CH=CHCH_3$ is:

a) 1.34 Å b) 1.92 Å
c) 2.5 Å d) 1.50 Å

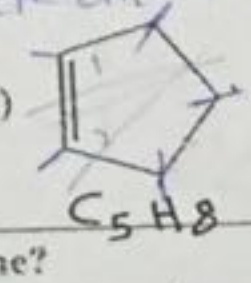
4. Which of the following compounds is isomer of 1-Pentene ?



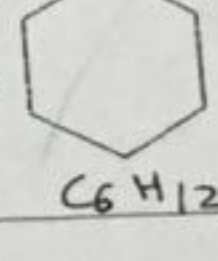
a)



b)



c)



d)

5. Which of the following compounds is neopeutane?

a) $CH_3-\underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}}-CH_3$ b) $CH_3-\underset{\underset{CH_3}{|}}{CH}-CH_3$ c) $CH_3-CH_2-\underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}}-H$

6. Allyl group is :

a) CH_3-CH_2- b) $CH_2=CH-CH_2-$ c) $CH_3-CH_2-CH_2-CH_3$ d) $CH_3-CH_2CH_3$

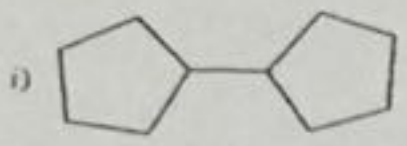
7. Which of the following alkenes exist as geometrical isomers (cis /trans)?

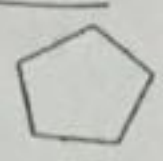
a) $(CH_3)_2C=CH-CH_3$ b) $CH_2=CH-CH_3$ c) $\begin{matrix}C_2H_5\\ \diagdown\\ C=CH-CH_2-CH_3\\ \diagup\\ C_2H_5\end{matrix}$ d) $CH_3CH=CHCH_3$

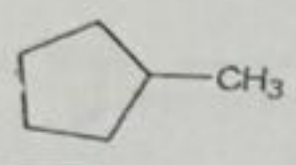
5-

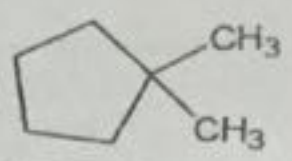
Circle

1.

i) 

ii) 

iii) 

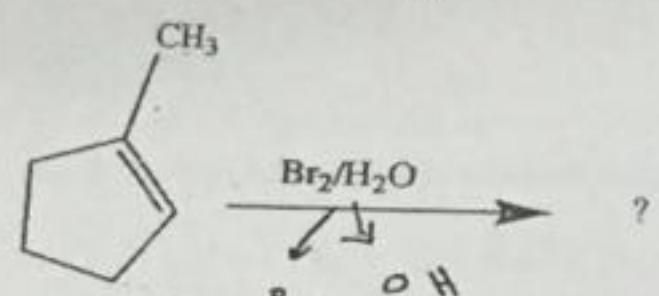
vi) 

2.

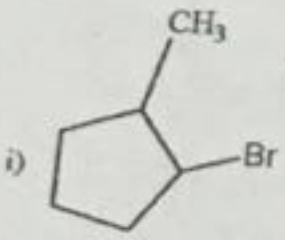
6-

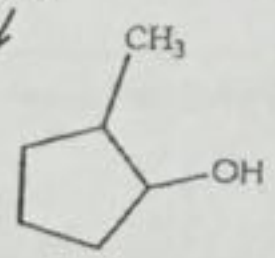
iii

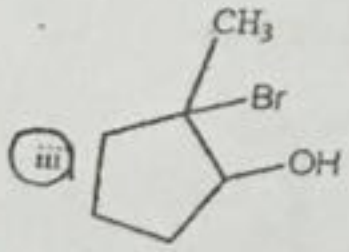
iv

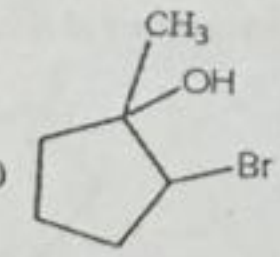


3

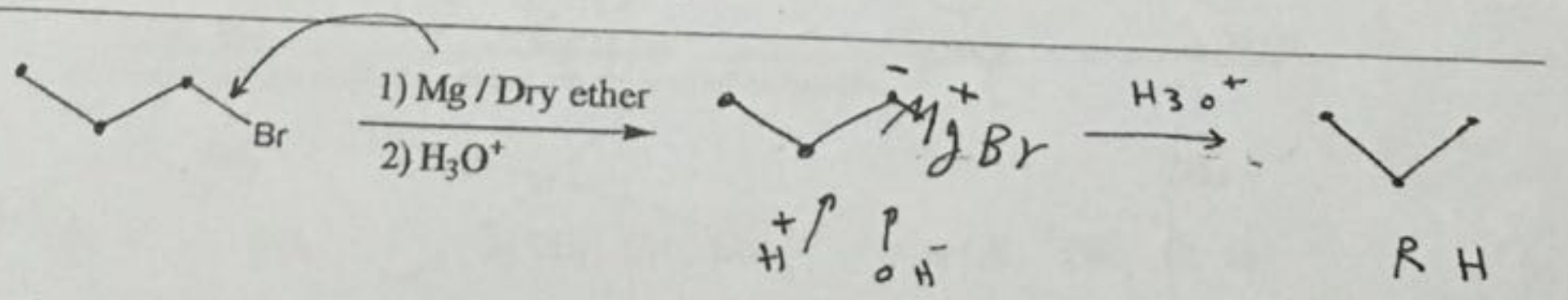
i) 

ii) 

iii) 

iv) 

7-



وبالله التوفيق،،،

Dr. Siham Lahsasni, Dr Shatha Alaqeel and Dr. Seham Al Terary

Dr. Nahed Nasser

Circle

23.

$CH_3CH{=}CHCH_3 + KMnO_4 \xrightarrow[H_2O]{\text{dil. cold OH}}$

a) $CH_3CH_2CH_2\text{-}CH_3$

b) $CH_3CH_2CHK\text{-}CH_3$

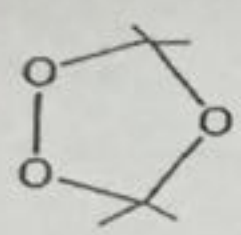
c) $CH_3\text{-}\underset{OH}{CH}\text{-}\underset{OH}{CH}\text{-}CH_3$

d) $CH_3\underset{Mn}{CH}CH_2\underset{OH}{CH_2}$

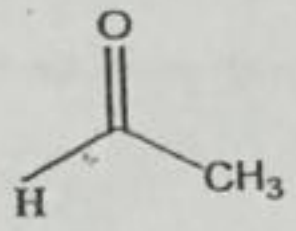
---

24. $CH_3CH{=}CHCH_3 \xrightarrow[2)H_2O/Zn]{1)O_3}$ $CH_3CHO + CH_3CHO$

a)



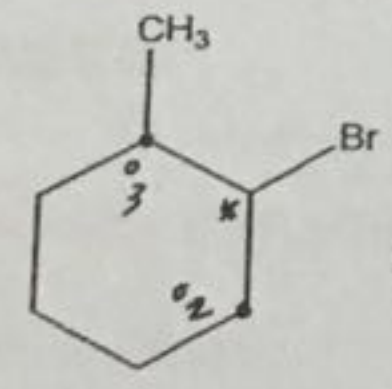
b) 2

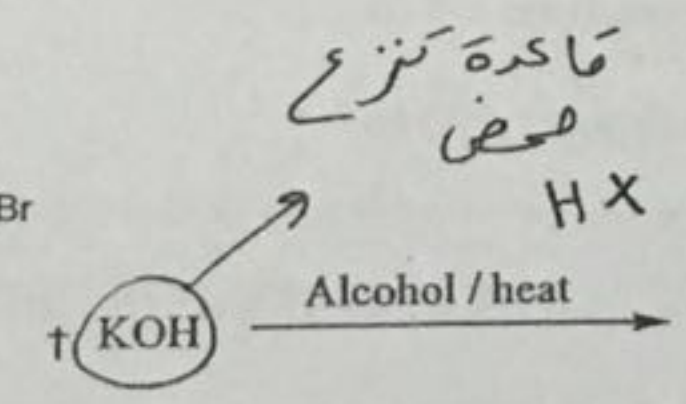


c) $CH_3CH_2CH_2CH_3$

d) $CH_3\underset{OH}{CH}CH_2CH_3$

25.

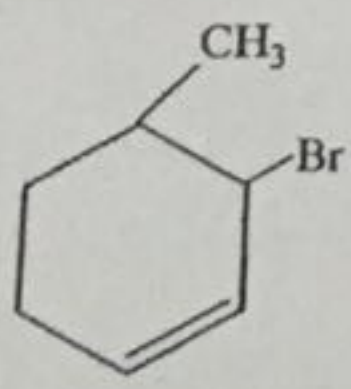




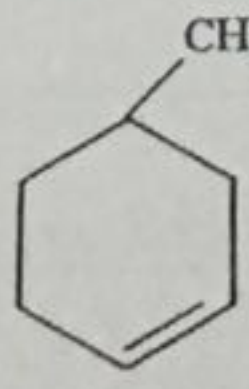
قاعدة تنزع حمض HX

(سايتزف)
تنزع H مجاورة لـ C الأقل H (الأقل درجة)

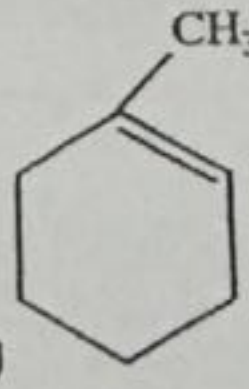
a)



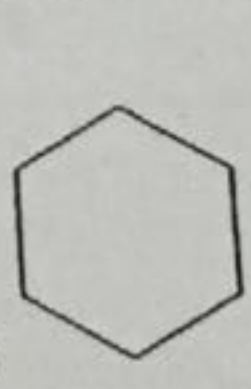
b)



c)



d)

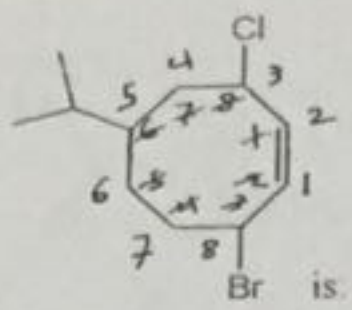


الرابطة 1 ←
الرابطة 1 ← نبدأ من الفرع

الرابطة 1 ← الفرع 3 5 8 ✓
الرابطة 1 ← 3 6 8 ×

ثم نكتب الفروع حسب الأبجدي

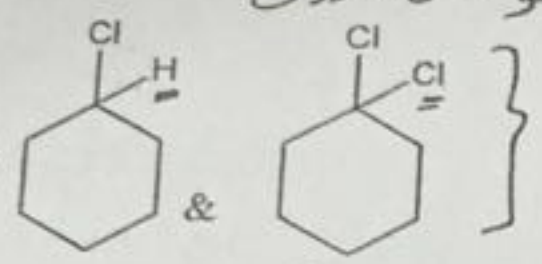
Circle

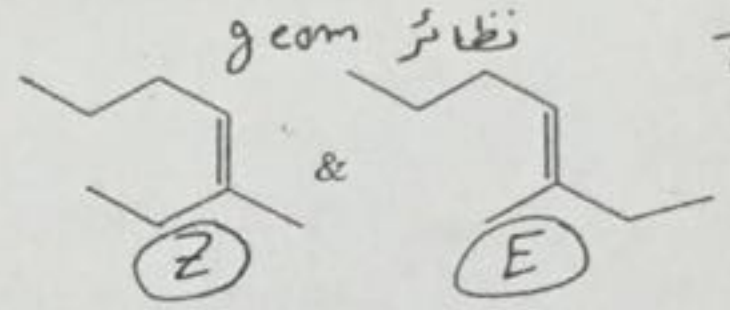
1. 4- The IUPAC name for  is. iv

i. 1-Bromo-4-chloro-6-isopropyl-2- cyclooctene.
ii. 3-Bromo-8-chloro-6-isopropyl-1-cyclooctene.
iii. 6-Bromo-1-chloro-3-isobutyl-7-cyclooctene.
(iv.) 8-Bromo-3-chloro-5-isopropyl-1-cyclooctene.

2. 5- Which of the following couple of molecules are structural isomers? iii

ليسو نفس الوزن

i) 

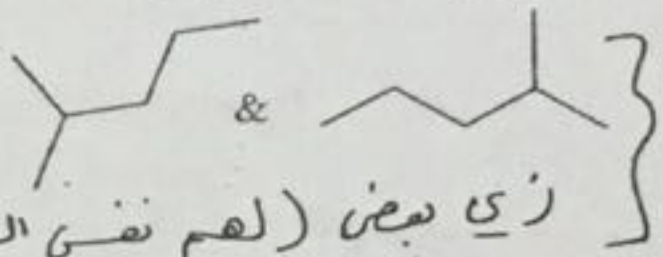
ii) 

نظائر geom

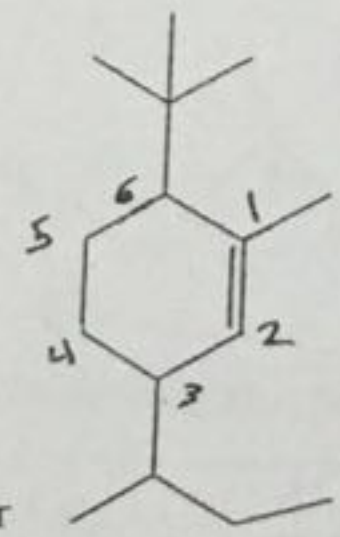
هم geom isom لأنهم ألكينات ولكن ليسو structur isomer لأن لهم نفس الاسم وواحد E والثاني Z

iii) 

C_6H_{14} C_6H_{14}

iv) 

زي بعض (لهم نفس الاسم)

3. 

6- The IUPAC name for is:

الأولوية للفرع والرابطة معاً
أعطي الفرع والرابطة الرقم 1
ثم الفرع الرابطة

i) 2-Methyl-3-*tert*-butyl-6- *sec.* butylcyclohexene.

ii) 1-*sec*-Butyl-4-*tert*-butyl-3-methyl-2-cyclohexene.

iii) 3-*sec*-Butyl-6-*tert*-butyl-1-methylcyclohexene. iii

iv) 1-*tert*-butyl-4-*sec*-butyl-2-methyl-2- cyclohexene.

نكتب الفروع حسب الأبجدي

لايبدأن من الأبجدي ولكن من sec & tert

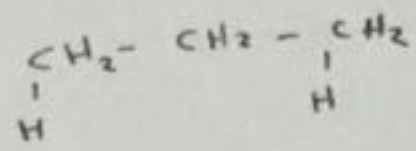
حالة خاصة الاثنان Butyl فنضطر هنا لمقارنة sec & tert وأخذنا sec قبل

III) Choose the correct and the major product for the following reactions:

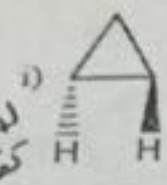
Circle

1- ii

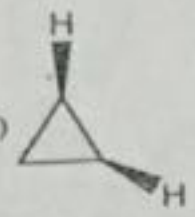
H_2 / Pd ⟶ ?

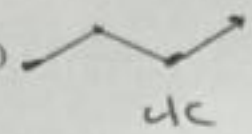


1.

i) 

ii) $CH_3CH_2CH_3$

iii) 

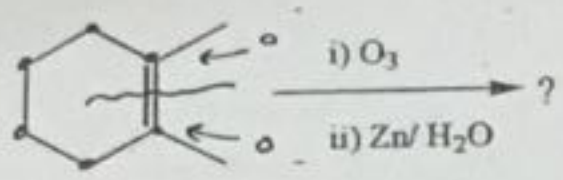
iv) 

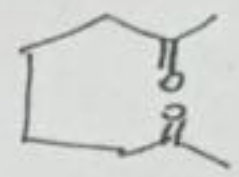
3 c

2.

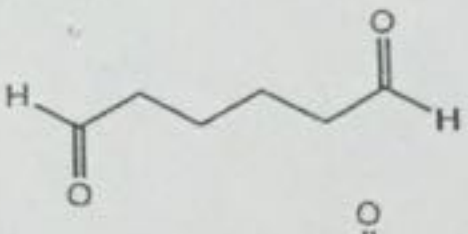
2-

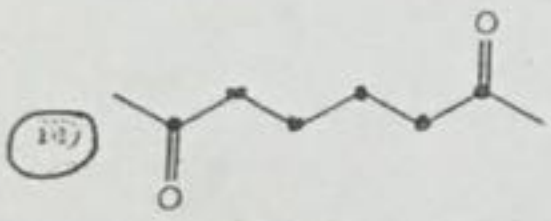
iii

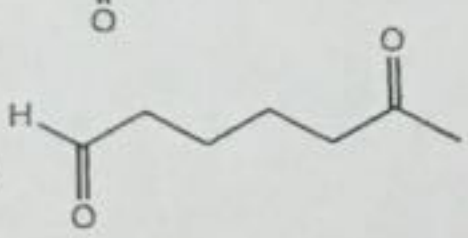




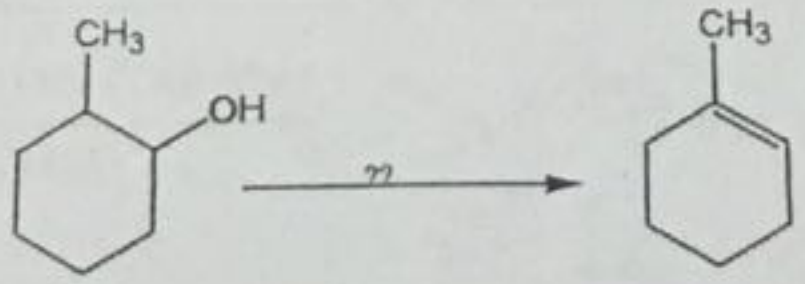
i) 

ii) 

iii) 

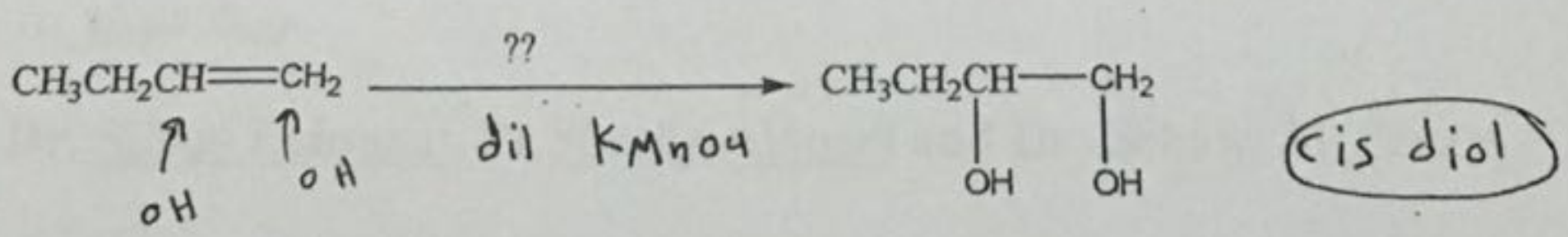
iv) 

3- What is the best reagent used for the following reaction? ii



i) $LiAlH_4$ ii) Conc. H_2SO_4, heat iii) NaOH vi) H_2/Pd

4- What is the best reagent used for the following reaction? iv

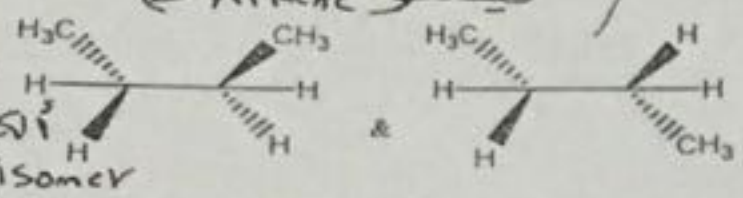


i) 2 moles of H_2O ii) O_3/ Zn, H_2O iii) Alcoholic KOH, heat iv) dil. $KMnO_4$

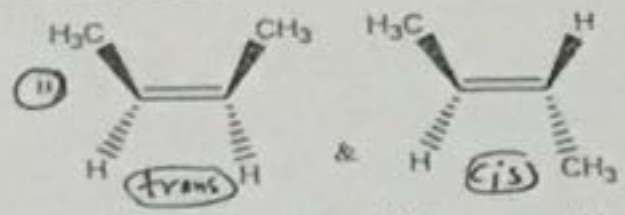
Alkanes
geom isomer صافيه

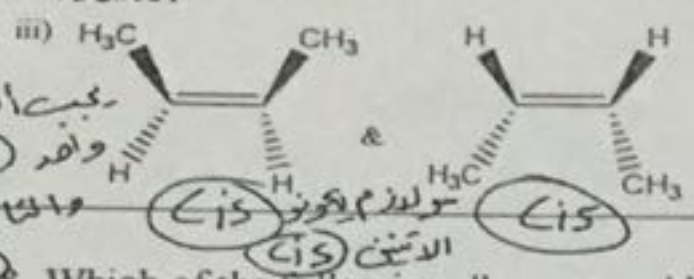
7- Which of the following couple of molecules are geometrical isomers? ii

← Alkene ليسو

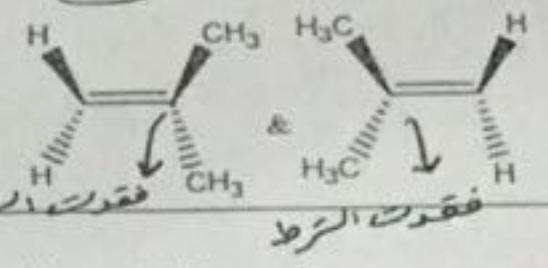
i) 

الكانات ماف geom isomer

ii) 

iii) 

يجب ان يكون cis واحد والثاني trans ليزم يكون الاثنين cis

iv) 

فقدت الشرط

فقدت الشرط

8- Which of the following alkanes would have the lowest boiling point? iv

لأنهم كلهم نفس الوزن بشوف التفرع. كلما زاد عدد الفروع تقل because more branches درجة الغليان

i) $CH_3CH_2CH_2CH_2CH_2CH_2CH_3$ 7c

ii) $CH_3CH_2CH_2CH_2CHCH_3$ (CH3 branch) 7c

iii) $CH_3CHCH_2CHCH_3$ (CH3, CH3 branches) 7c

iv) $H_3C-C(CH_3)_2-CH(CH_3)-CH_3$ 7c

9- Which of the following hydrocarbons have acidic hydrogen? iii

i) 2-Butyne ليس Alkyne طرفي

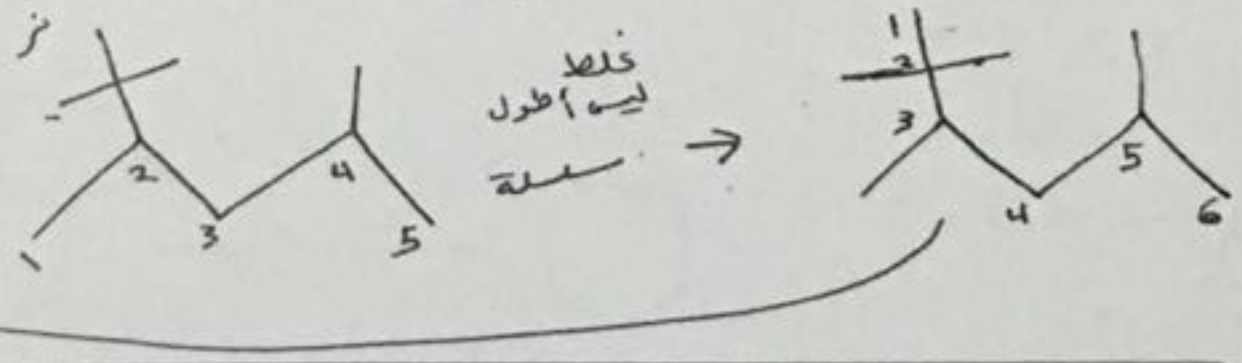
ii) 1-Butene ليس Alkene طرفي

iii) 1-Butyne Alkyne طرفي

iv) 2-Butene Alkene ليس طرفي

10- (2-*tert*-Butyl-4-methyl pentane) is incorrect name according to IUPAC rules correct it.

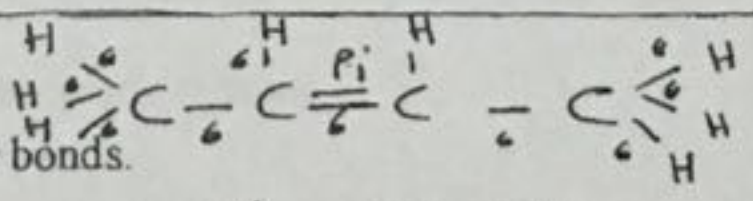
الجواب: تركيب الخطأ "أولاً"



2,2,3,5-Tetramethylhexane

II) *State whether the following statements are true or false?*

$CH_3-CH=CH-CH_3$.



1. The number of σ bonds in 2-butene is 9 bonds. (T) (F)

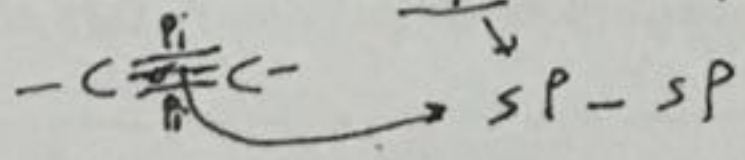
10 عدد الروابط 6 هو

2. Alkanes can react by addition. (T) (F)

أكانت تتفاعل بالاستبدال substitution

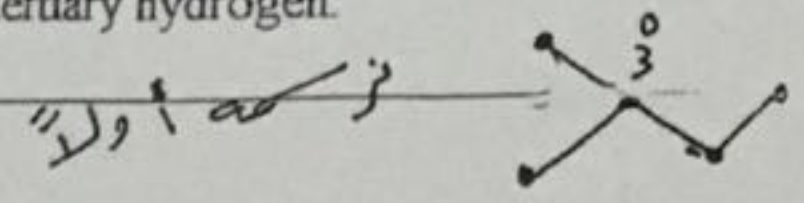
3. The bond angle in hybrid orbitals in ethane is equal to 109.5. (T) (F)

4. The sigma bond between the two carbon atoms in ethyne is made by overlap of two sp^2 orbitals



(T) (F)

5. Isopentane has one tertiary hydrogen. (T) (F)



ذرة كربون أولية

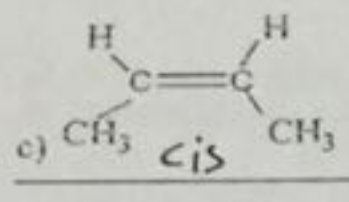
Circle

8. Which compound exists in (E) form from geometric isomerism?

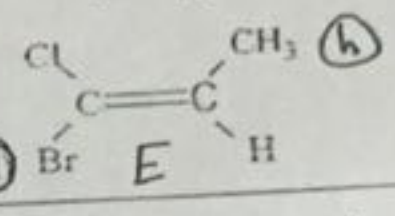
1.

a) 

b) 



c)



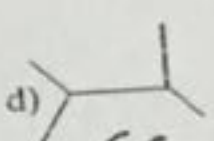
2.

9. Which of the following compounds will show highest boiling point ?

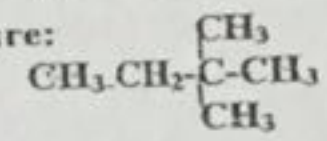
a) 

b) 

c) 

d) 

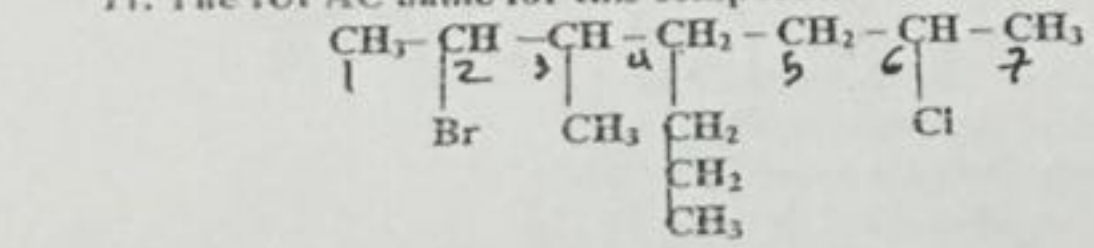
10. Choose the IUPAC name for the flowing structure:



3

a) 2-Ethyl-2-methylbutane
b) 3-Ethyl-3-methylbutane
c) 2,2-Dimethylbutane
d) 1-Ethyl 1,1-dimethylproppane

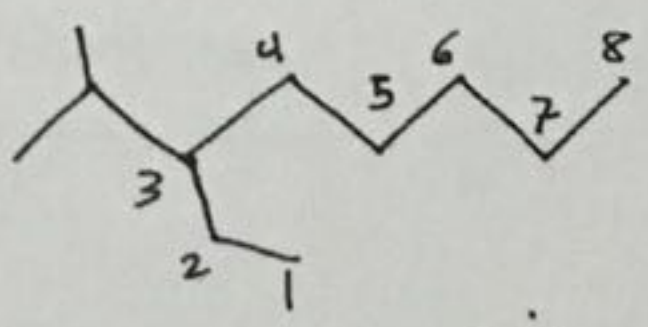
11. The IUPAC name for this compound



is:

a) 2-Bromo-3-methyl-4-pentyl-6-Chloroheptane
b) 6-Bromo-2-chloro-5-methyl-4-pentylheptane
c) 2-Bromo-6-chloro-3-methyl-4-propylylheptane
d) 2-Chloro-4-pentyl-5-methyl-6-bromoheptane

12. The name of this compound



is:

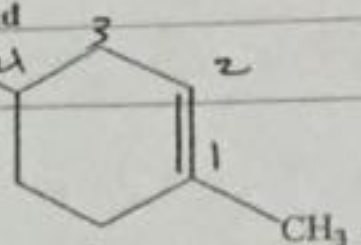
a) 3-Iso-propyl-2-methyloctane
b) 2-Ethyl-3-isopropylnonane
c) 2-methyl-3-isopropyloctane
d) none of the above

3- ethyl - 2-methyl octane

Circle

1.

13. The name of the following compound

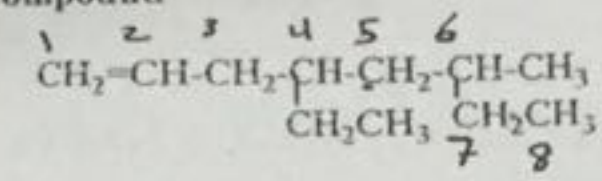


is:

a) 4-Bromo-1-Methylcyclohexene
b) 1-Methyl-4-bromocyclohexane
c) 2-methyl-3-bromohexane
d) 5-Bromo-2-Methylcyclohexene

2.

14. The IUPAC name of the following compound

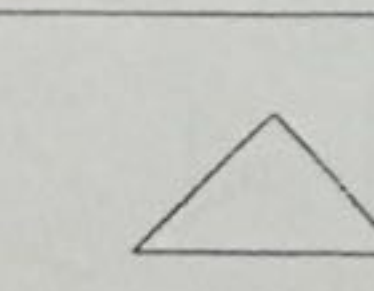


is:

a) 4-Ethyl -6-methyl-1-octene
b) 4,6-Diethylheptene
c) 2,4-Diethylheptane
d) 3-methyl 5-ethyloctene

3

15. The IUPAC name of the following compound



is:

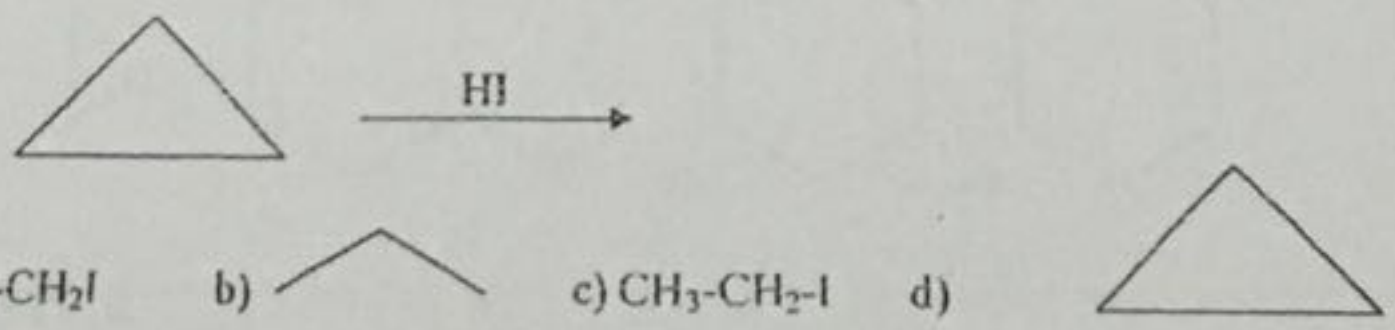
a) 1-Chloro-5-ethyl-2-cyclohexene
b) 1-Chloro-3-ethylcyclopentene
c) 3-Chloro-4-ethylcyclopentene
d) 1-Ethyl-3-chloro-pentene.

Choose the major product from each equation:

16. $(CH_3CH_2)_2CuLi + CH_3Br \longrightarrow$

a) $CH_3CH_2CH_3$ b) $(CH_3CH_2)_2CHCH_3$ c) $CH_3CH_2CH_2Br$ d) $(CH_3CH_2)_2CHCH_2Br$

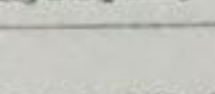
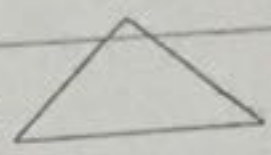
17.



a) CH_3-CH_2-CH_2I b) c) CH_3-CH_2-I d)

Circle

18. $CH_3\overset{1}{C}H_2\overset{2}{C}H_2\overset{3}{C}H_3 + Cl_2 \xrightarrow{UV/light}$ $CH_3\underset{Cl}{\overset{|}{C}}HCH_3 + HCl$

a) $CH_3CH_2CH_2Cl$ (b) $CH_3\underset{Cl}{\overset{|}{C}}HCH_3$ c)  d) 

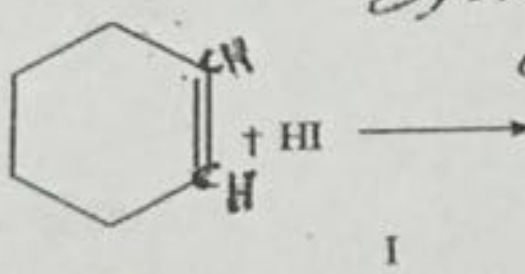
19. $CH_3 - CH_2OH \xrightarrow{\Delta/H_2SO_4}$ نزع ماء $CH_3 - \underset{OH}{\overset{|}{C}}H_2 \xrightarrow{\text{نزع ماء}} CH_2 = CH_2$

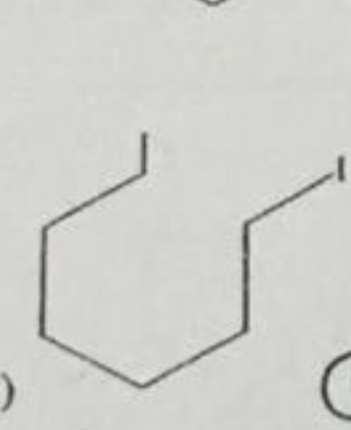
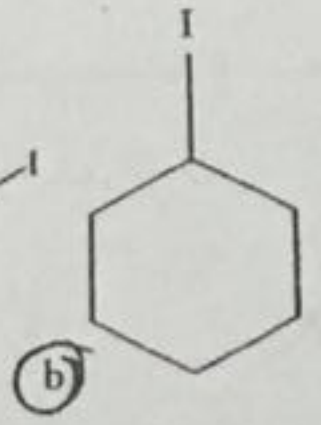
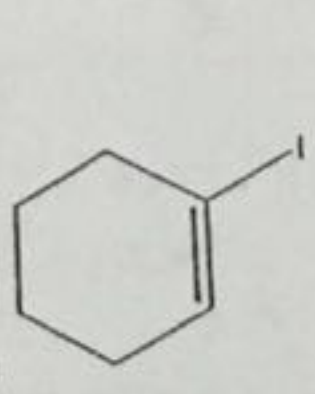
(a) $CH_2 = CH_2$ b) $CH_3 - CH_3$ c) $CH_2OH - CH_2OH$ d) $CH_3 - CH_2OH$

20. $H_2C(Br)-CH(Br)-CH_3 + NaI \xrightarrow[\text{Or Zn/CH}_3\text{COOH}]{\text{acetone}}$ نزع X_2 $\longrightarrow CH_2 = CH - CH_3$

a) $H_3C\text{-}CH = CH_2$ b) CH_3CH_2NaBr c) $H_3C\text{-}CH = CHBr$ d) $H_3C\text{-}CBr = CH_2$

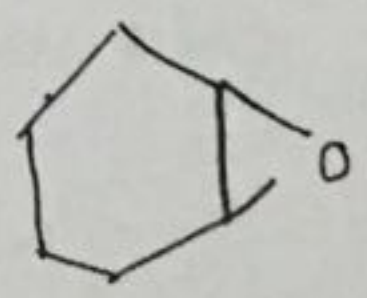
21. اضافة ماركونيكوف وهنا زي بعض سارح يغرمه الاضافة



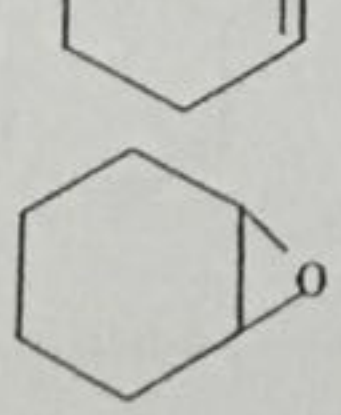
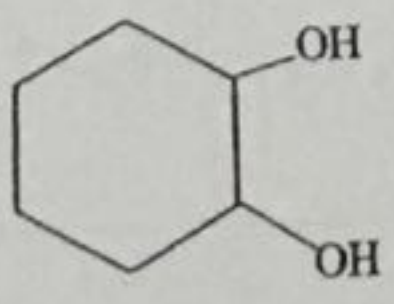
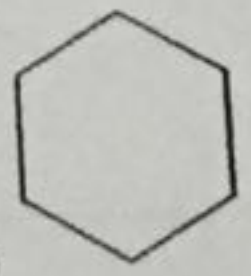
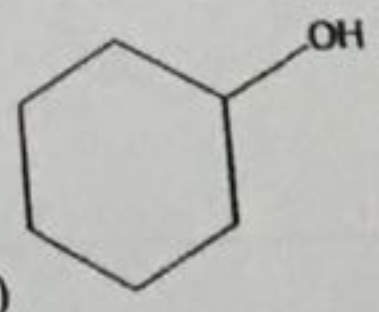
a)  (b)  c)  d) $CH_3CH_2CH_2CH_2CH_2CH_3$

22. Per oxide acid

$R\ CO_3H$



للميد الثاني

a)  b)  c)  d) 

Epoxide

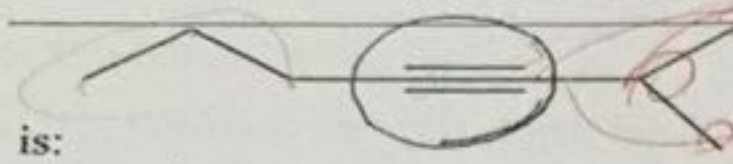
King Saud University (The Preparatory Year)

Chem.: 145 **Midterm 1 *** **Time: 1 hour**

Name: ---------- **St. No. (----------)**

Group NO. (----------) **Serial No.(----------)**

I) Choose the correct answer for the following:

1. 

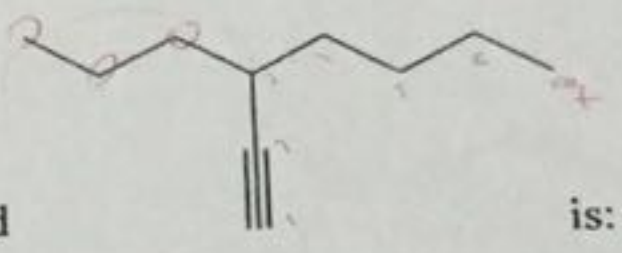
1- The common name for is:

a) 6-Methyl-4-heptyne .

b) Isopropylpropylacetylene.

c) 2-Methyl-3-heptyne.

d) Propylisopropylacetylene.

2. 

2- The IUPAC name for this compound is:

a) 3-Butylhexyne.

b) 4-Acetyleneoctane.

c) 3-Propyl-1-heptyne.

d) Octylacetylene.

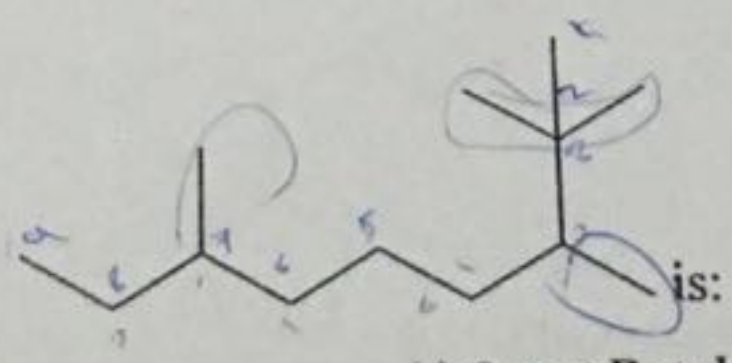
3. **3-** The IUPAC name for $(CH_3)_2CHCH(CH_3)CH_2CH{=}CH_2$ is :

a) 4,5,5-Trimethyl-1-pentene.

b) 4-Methyl-4-isopropyl-1-butene.

c) 2,3-Dimethyl-5-hexene.

d) 4,5-Dimethyl-1-hexene.

4. **4-** The IUPAC name for  is:

a) 3,7,8,8-Tetramethylnonane.

b) 2-tert.Butyl-5-methyloctane.

c) 2,2,3,7-Tetramethylnonane.

d) 5-Methyl-2-tert.butyloctane

5-

$$CH_3CH{=}CHCH_2CH_2CH_3 \xrightarrow[2)\ Zn\ /\ H_2O]{1)\ O_3}$$

2

a) 2 $CH_3CH_2\overset{O}{\overset{\|}{C}}-H$

b) $CH_3\overset{O}{\overset{\|}{C}}-H$ and $CH_3CH_2CH_2\overset{O}{\overset{\|}{C}}-H$

c) 2 $CH_3CH_2\overset{O}{\overset{\|}{C}}-CH_3$

d) 2 $CH_3CH_2CH_2\overset{O}{\overset{\|}{C}}-H$

3

III) Answer the following

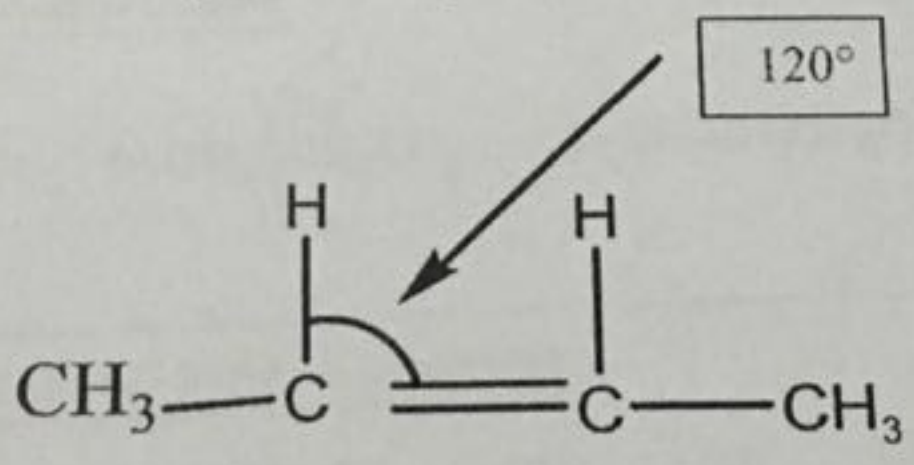
1- The following name is **incorrect** according to IUPAC rules.
3-Butyl-1-hexene. **Write the correct name.**

لیست اطول سلسلة

$CH_2=CHCHCH_2CH_2CH_3$

3-Propyl-1-heptene

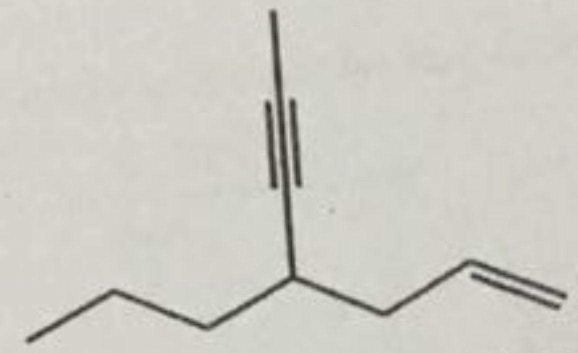
2- What is the value of the bond angle indicated by the arrow in the following structure?



Dr. Nahed Nasser, Dr. Noha Elnagdi

Dr. Seham AlTerary and Dr. Shatha AlAqeel

وبالله التوفيق،،،

4- The IUPAC name for this compound  is:

a) 4-Allyl -2-heptyne

b) 4- Propyl-1-hepten-5-yne

c) 4-Propyl-6-hepten-2-yne

d) 4-Allyl-5-heptyne

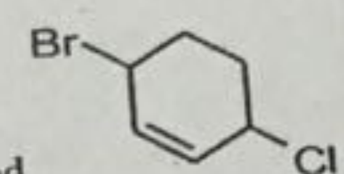
5- Which of the following structures is vinyl acetylene?

a) $HC\equiv C\text{-}CH=CH_2$

b) $H_2C=CH\text{-}C\equiv C\text{-}CH\text{-}CH_2$

c) $HC\equiv C\text{-}CH_2\text{-}CH=CH_2$

d) $HC\equiv C\text{-}C\equiv CH$

6- The IUPAC name for this compound  is:

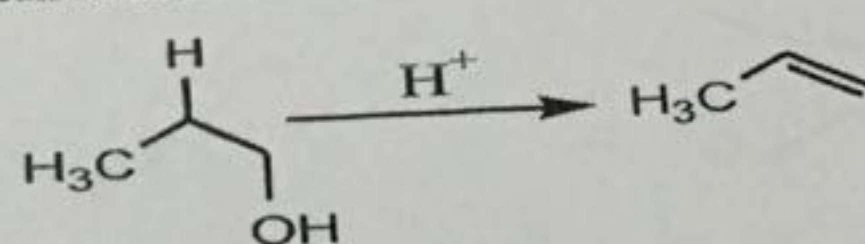
a) 1-Bromo-4-chloro-5-cyclohexene

b) 4-Bromo-1-chloro-2-cyclohexene

c) 6-Bromo-3-chlorocyclohexene

d) 3-Bromo-6-chlorocyclohexene

7- The following reaction can be classified as:



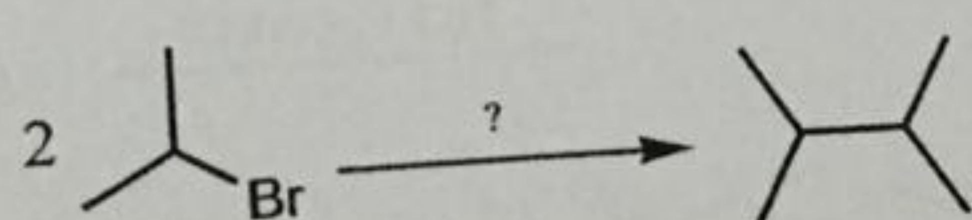
a) Addition

b) Elimination

c) Substitution

d) Hydrogenation

8- Which reaction conditions would be used to accomplish the following transformation?



a) Pt catalyst and H_2

b) Zn / H^+

c) Na

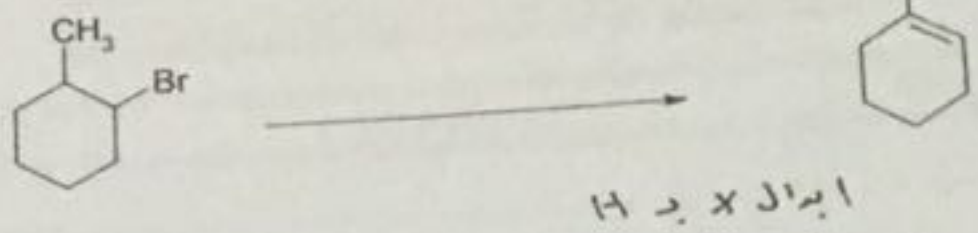
d) $LiAlH_4$ in ether then H_3O^+

R-X ⟶ R [illegible]

لا

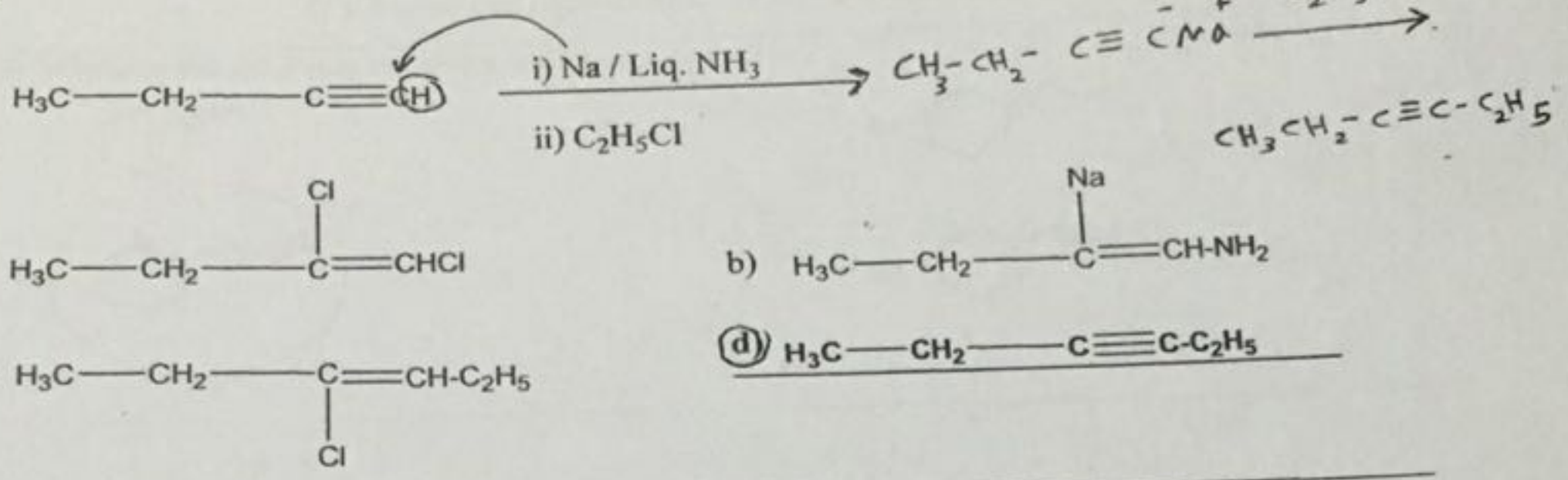
Na نختار ⇐ تفاعل وارتز

4- What is the best reagent used for the following reaction?



a) Conc H_2SO_4 **b) KOH/Alcohol/heat** c) Zn/acetic acid d) Br_2, H_2O

5-



a) $H_3C-CH_2-C(Cl)=CHCl$

b) $H_3C-CH_2-C(Na)=CH-NH_2$

c) $H_3C-CH_2-C(Cl)=CH-C_2H_5$ (Cl)

d) $H_3C-CH_2-C\equiv C-C_2H_5$

(IV) Bonus:

1. Which of the following is the correct IUPAC name for the compound that has the molecular formula C_4H_9Cl

a) 3-Chlorobutane.

b) 1-Chloro-2-methylpropane.

c) 2-Chloro-2-methylbutane

d) 1-Chloro-3-methylpropane.

2. A compound has the molecular formula of C_6H_{12} reacts with ozone to yield two moles of a single product with molecular formula of C_3H_6O. The IUPAC name of this C_6H_{12} is :

a) Cyclohexane.

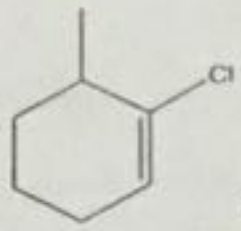
b) 2-Hexene.

c) Cyclohexene.

d) 2,3-Dimethyl-2-butene.

Cl

1.

5- The IUPAC name for  is:

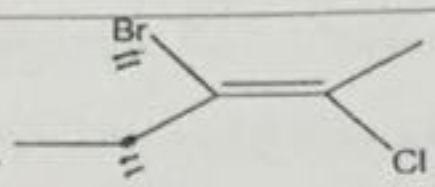
a) 2-Chloro-3-methylcyclohexene.

b) 2-Chloro-3-methyl-2-cyclohexene.

c) 1-Chloro-6-methylcyclohexene.

d) 1-Chloro-6-methyl-2-cyclohexene.

2

6- The IUPAC name for  is:

a) E-1-Bromo-2-chloro-1-ethylpropene.

b) E-3-Bromo-2-chloro-2-pentene.

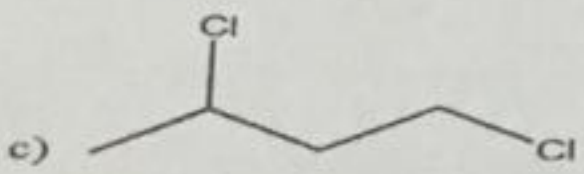
c) Z-3-Bromo-2-chloro-2-pentene.

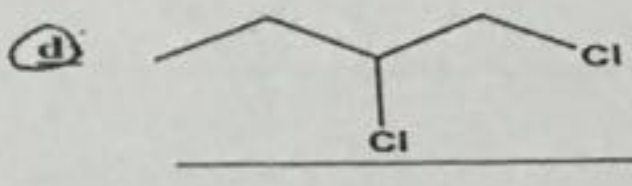
d) Z-1-Bromo-2-chloro-1-ethylpropene

7- Which compound is a likely product from addition of Cl_2 to 1-butene?

a) 

b) 

c) 

d) 

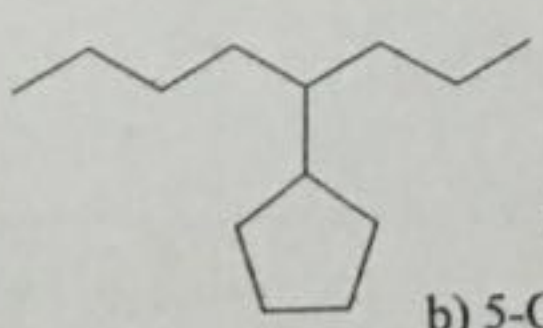
8- Which reaction conditions would best convert 2-pentyne to *trans*-2-pentene?

a) Pt catalyst and H_2.

b) $Pd(BaSO_4)$ catalyst and H_2.

c) Li in liquid NH_3 and H_2.

d) $LiAlH_4$ in dry ether.

9- The IUPAC name for  is:

a) 4-Octylcyclopentane.

b) 5-Cyclopentyloctane.

c) 4-Cyclopentyloctane.

d) 1-Cyclopentyl-1-propylbutane.

10- What is the IUPAC name for $CH_3CH_2C(CH_3)_2CH_2CH(CH_3)_2$?

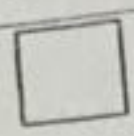
a) 2,4,4-Trimethylhexane.

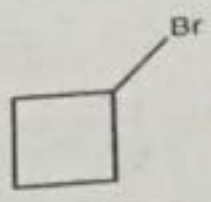
b) 2,2,5-Trimethylhexane.

c) 1,1,3,3-Tetramethylpentane.

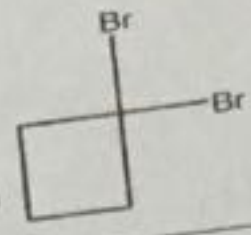
d) 3,3,5-Trimethylhexane.

II) Choose the correct and the major product for the following reactions:

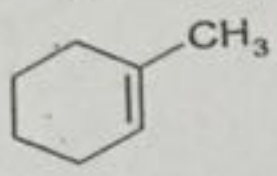
1- 

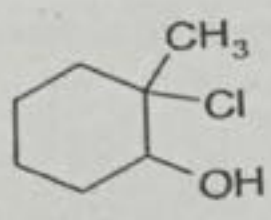
a) 

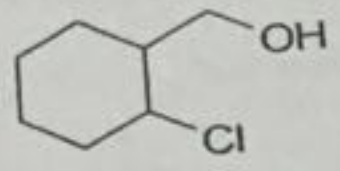
b) $CH_3CH_2CH_2CH_2Br$

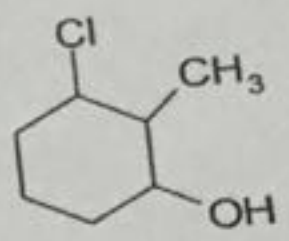
c) 

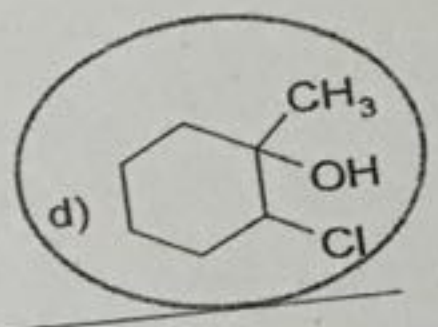
d) $BrCH_2CH_2CH_2CH_2Br$

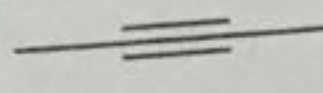
2-  + Cl_2 , H_2O ⟶

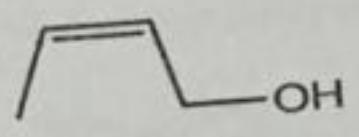
a) 

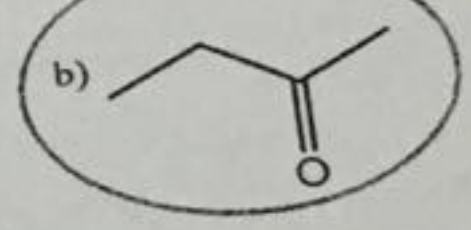
b) 

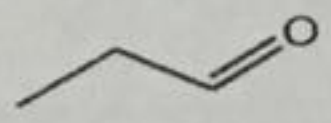
c) 

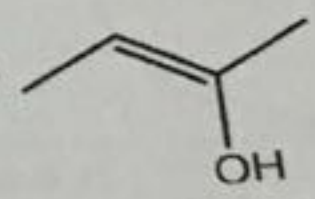
d) 

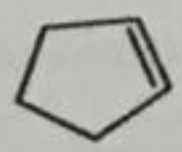
3-  + H_2O $\xrightarrow{H_2SO_4 / HgSO_4}$

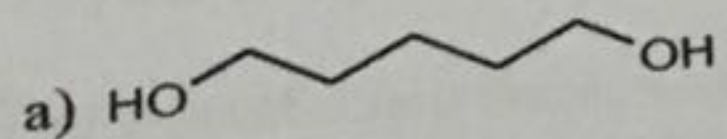
a) 

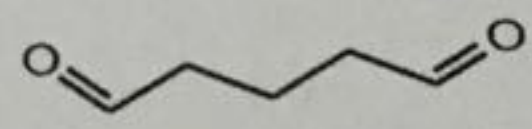
b) 

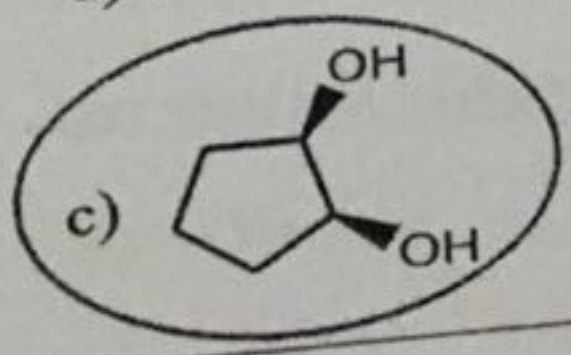
c) 

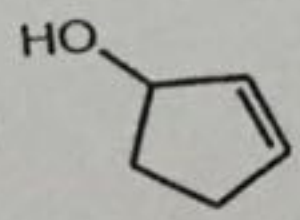
d) 

4-  $\xrightarrow{KMnO_4 / \bar{O}H}$

a) 

b) 

c) 

d) 

كلية العلوم
قسم الكيمياء

الزمن : ساعة واحدة

١٤٣١ / ٧ / ٢٠ التاريخ :

الإختبار الفصلى الأول لمقرر : كيم
الفصل الدراسى الثانى

اسم الطالبة :

رقم الشعبة :

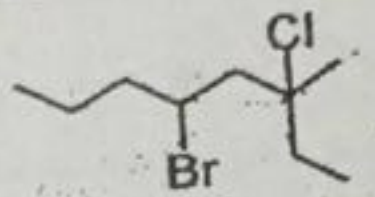
الرقم الجامعى :

الرقم المسلسل:

Choose the correct IUPAC names of the following structure:

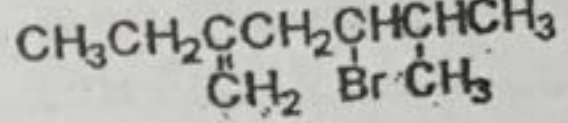
(A)

1- a) 5-Bromo-3-chloro-3-methyl octane.
b) 4-Bromo-6-chloro-6-ethyl heptane .
c) 4-Bromo-2-chloro-2-ethyl heptane .
d) 4-Bromo-6-chloro-6-methyl octane .



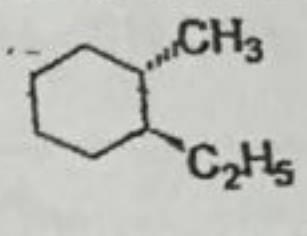
(B)

2- a) 3-Bromo-5-ethyl-2-methyl-5-hexene .
b) 4-Bromo-2-ethyl-5-methyl-1-hexene.
c) 3-Bromo-5-methylene-2-methyl heptane.
d) 5-Bromo-3-methylene-2-methyl heptane.



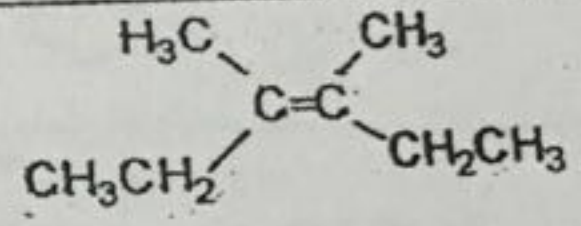
(B)

3- a) cis-1-Ethyl-2-methyl cyclohexane
b) trans-1-Ethyl-2-methyl cyclohexane .
c) cis-1-Methyl-2-ethyl cyclohexane .
d) trans-1-Methyl-2-ethyl cyclohexene .



(C)

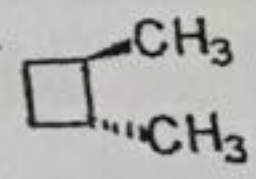
4- a) E- 3,4-Dimethyl 3-hexene .
b) trans-3,4-Dimethyl 3-hexene .
c) cis-3,4-Dimethyl 3-hexene .
d) cis-2,3-Diethyl 2-butene .



Choose the correct structure for each name .

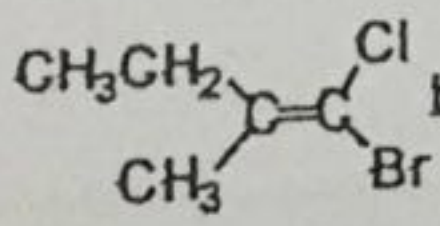
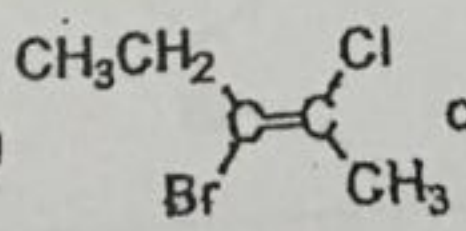
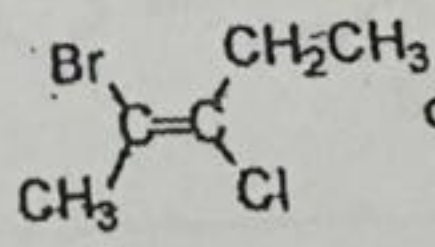
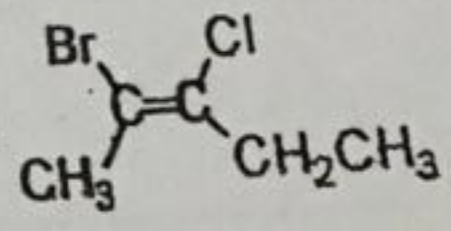
(B)

1- 2,2-Dimethyl butane

a) $CH_3CH(CH_3)CH_2CH_3$ b) $CH_3C(CH_3)_2CH_2CH_3$ c) $CH_3CH_2CH_2CH_2CH_2CH_3$ d) 

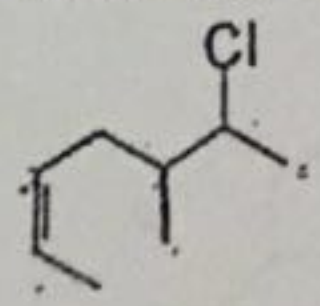
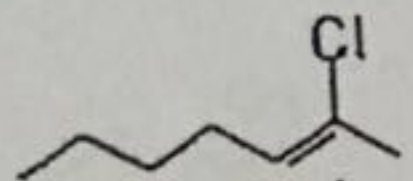
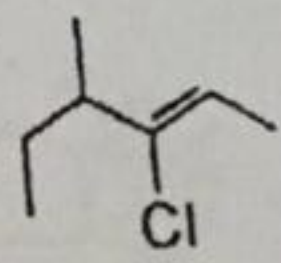
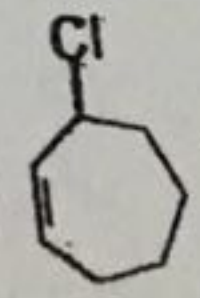
(D)

2- Z-2-Bromo-3-chloro-2-pentene

a) 
b) 
c) 
d) 

(A)

3- 6-Chloro-5-methyl-2-heptene

a) 
b) 
c) 
d) 

1. 3-Hexene can show geometrical isomerism while 2-methyl-2-butene cannot. (T) (F).

2. Boiling point of 3,3-Dimethyloctane is higher than decane. (T) (F).

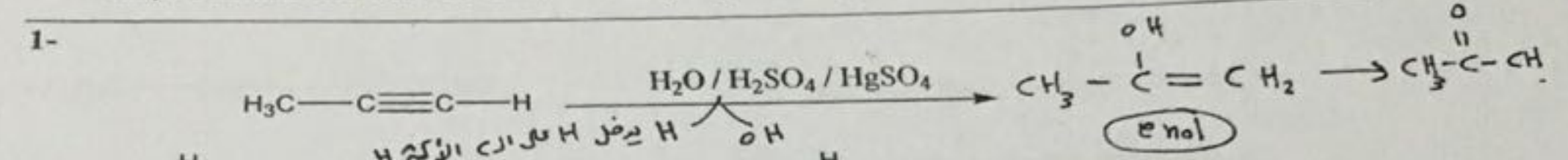
3. Hydrohalogenation of 4-Methyl-1-hexene with HCl will produce 2-chloro -4-methylhexane. (T) (F).

4. The hybridization of all carbon atoms in Butene is sp^2 (T) (F).

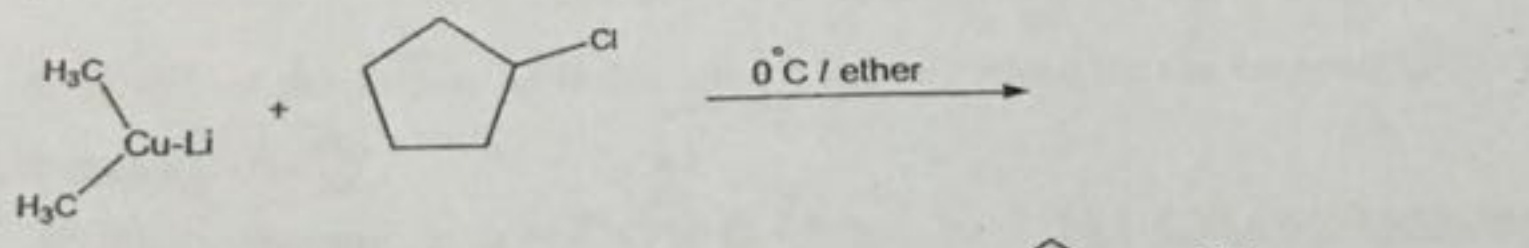
5. The sigma bond between hydrogen and carbon atoms in acetylene is made by overlap of sp^2 hybridized orbital of a carbon atom with 1S orbital of hydrogen atom. (T) (F).

III) Choose the correct and the major product for the following reactions:

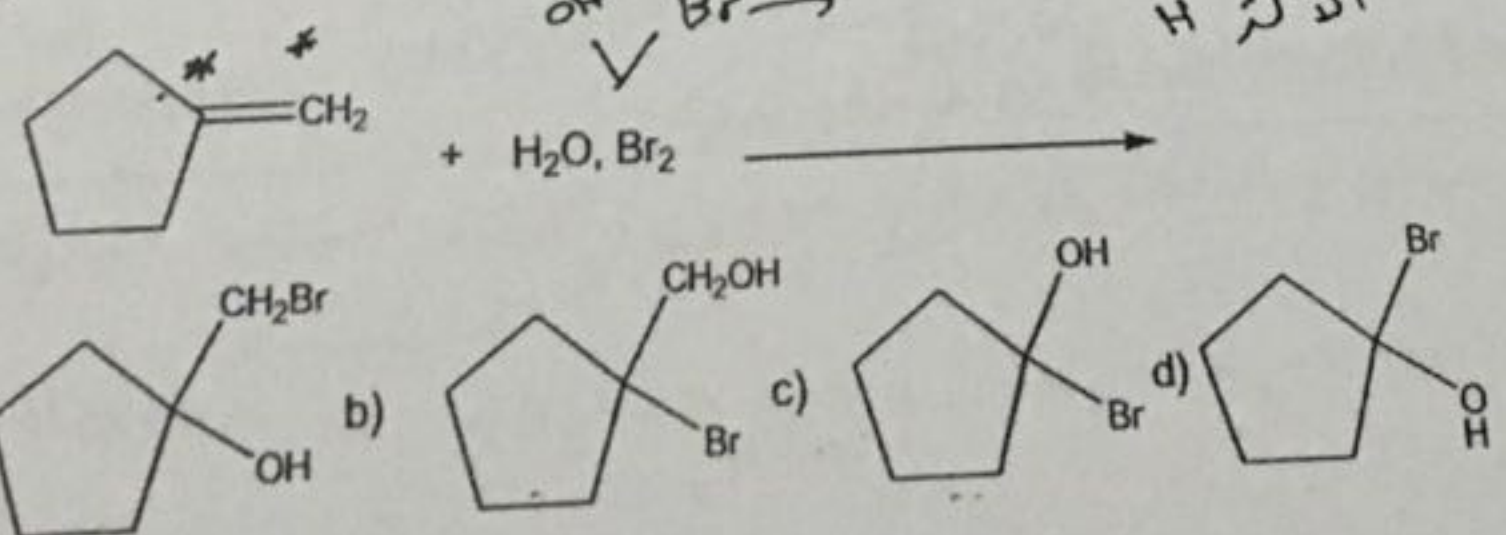
1-



2-



3-



King Saud University (The Preparatory Year)

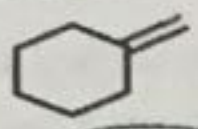
Chem.: 145 **Midterm 1 *** **Time: 1 hour**

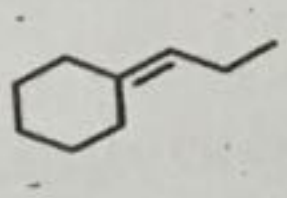
Name: _____ **St. No. (_____)**

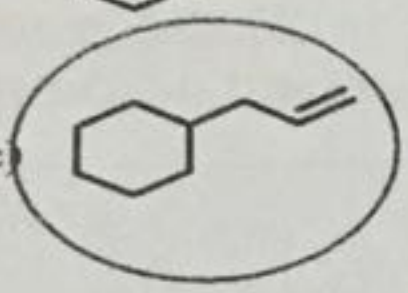
Group NO. (_____) **Serial No. (_____)**

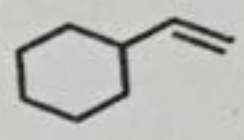
I) Choose the correct answer for the following:

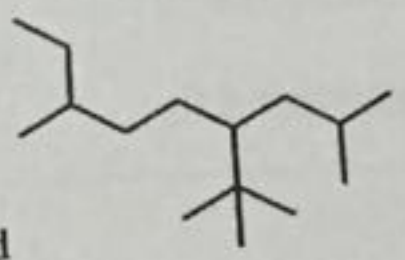
1- Which of the following structures is allyl cyclohexane?

a) 

b) 

√c) 

d) 

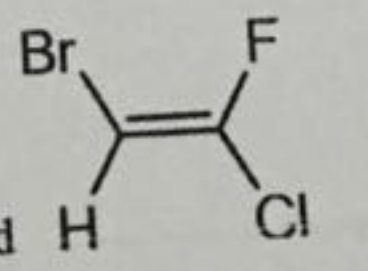
2- The IUPAC name for this compound  **is:**

a) 3-*tert*-Butyl-6-ethyl-1,1,6-trimethylpentane

b) **4-*tert*-Butyl-2,7-dimethylnonane**

c) 3-Isobutyl-2,2,6-trimethyloctane

d) 5-*tert*-butyl-2-ethylisononane

3- The IUPAC name for this compound  **is:**

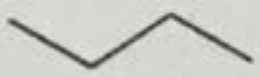
a) 1-Chloro-1-fluoro-2-bromoethene.

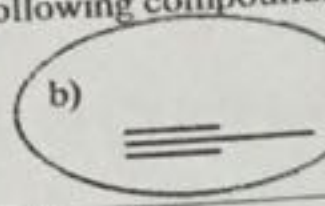
b) *trans*-2-Bromo-1-chloro-1-fluoroethene.

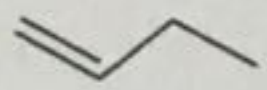
c) *E*-2-Bromo-1-chloro-1-fluoroethene.

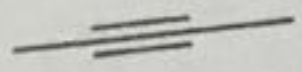
d) *Z*-1-Chloro-1-fluoro-2-bromoethene.

9- Which one of the following compounds has acidic hydrogen?

a) 

b) 

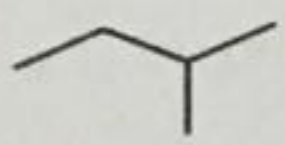
c) 

d) 

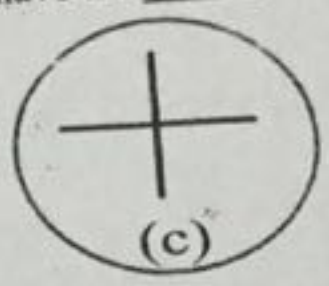
10- Heptene is immiscible with------

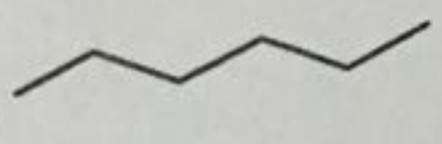
a) $CHCl_3$ b) CCl_4 c) Benzene d) C_2H_5OH

11- Which one of the following compounds would have the **lowest** boiling point?


(a)

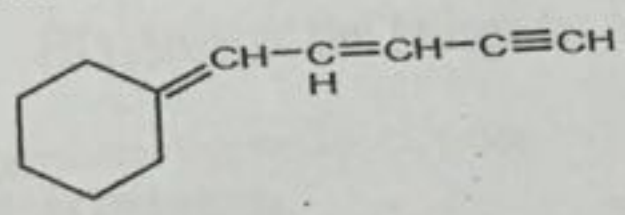

(b)


(c)


(d)

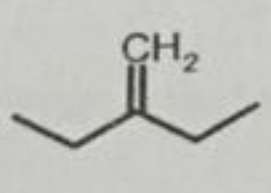
لقل الوزن ⇐ يقارن التفرع

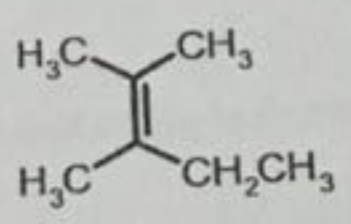
12- How many π (pi) bonds present in the following compound?

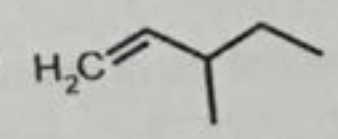


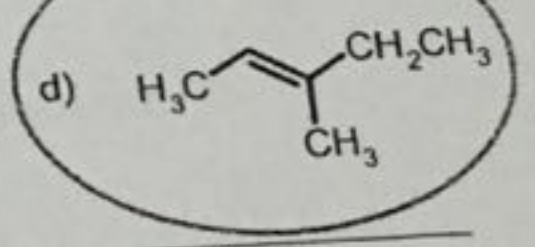
a) 7 b) 4 c) 2 d) 3

13- Which one of the following compounds can show geometric isomerism?

a) 

b) 

c) 

d) 

14- In methane (CH_4) the hydrogen atoms are oriented towards the corners of:

a) Pyramid b) Tetrahedron c) Rectangle d) Triagonal planar

15- Which of the following statements about alkenes is **false?**

a) They react mainly by addition

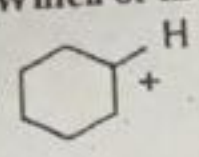
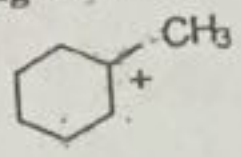
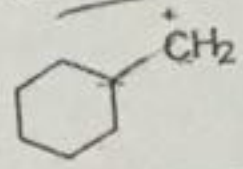
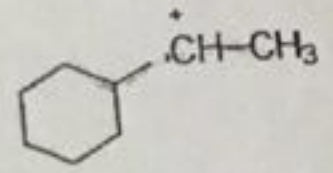
b) They have one or more double bonds

c) They show free rotation about C=C

d) They are non polar

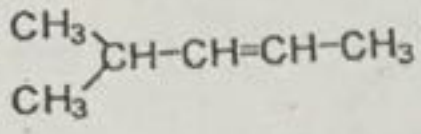
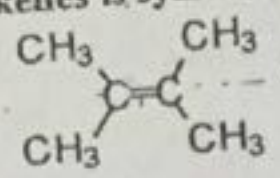
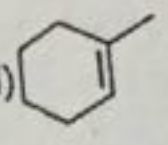
العبارة هو restict rotation أو limit دوران حقيقي

9- Which of the following carbonium ions is the most stable ?

a)  b)  c)  d) 

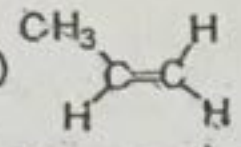
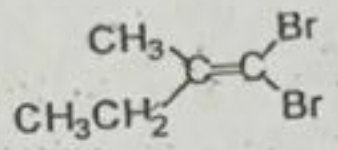
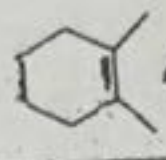
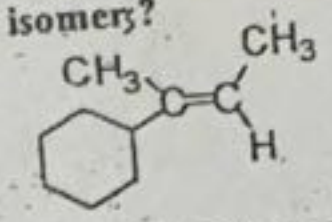
B

10- Which of the following alkenes is symmetrical ?

a)  b)  c) $CH_3-CH=CHCH_2-CH_3$ d) 

B

11- Which of the following compounds has two geometric isomers?

a)  b)  c)  d) 

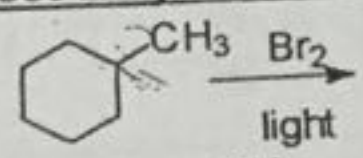
d

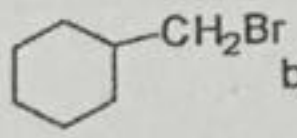
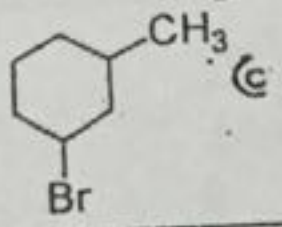
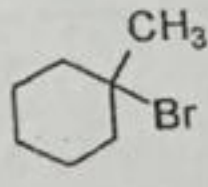
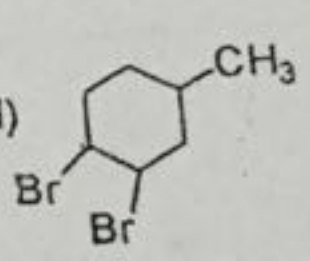
12- 2-Chloro butane on reaction with alcoholic KOH and heat gives mainly one of the following as the major product .

a) 1-Butene b) 2-Butene c) Butane d) Cyclobutane

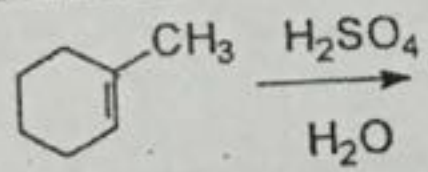
B

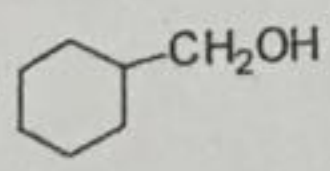
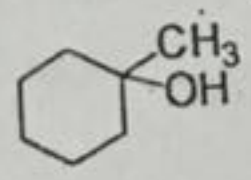
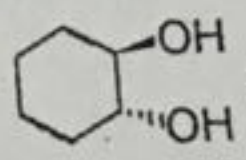
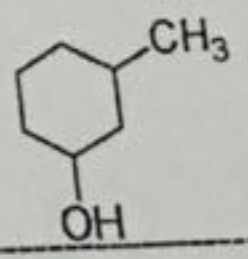
Choose the correct major product from each equation:-

1- 

a)  b)  c)  d) 

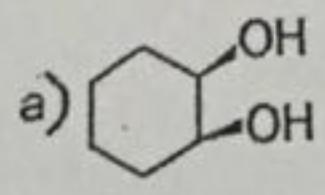
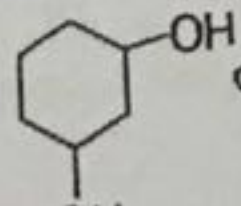
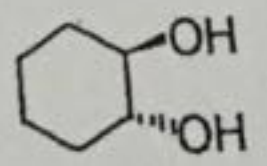
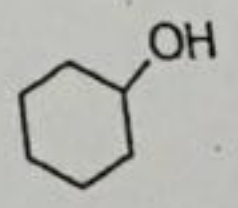
c

2- 

a)  b)  c)  d) 

B

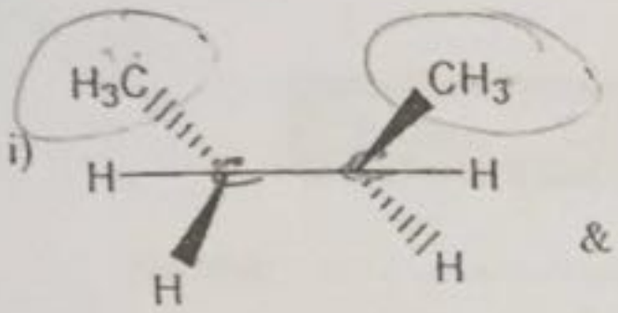
3- 

a)  b)  c)  d) 

A

7- Which of the following couple of molecules are geometrical isomers? ii

i)



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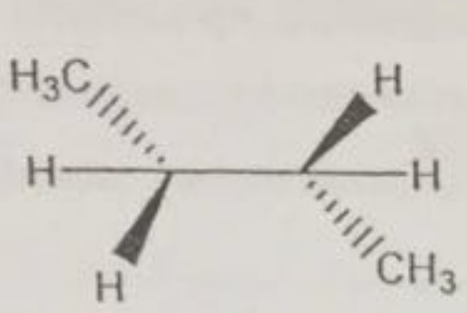

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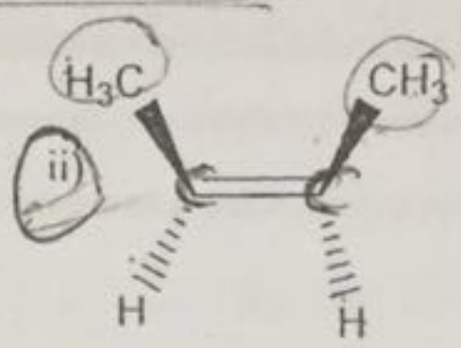

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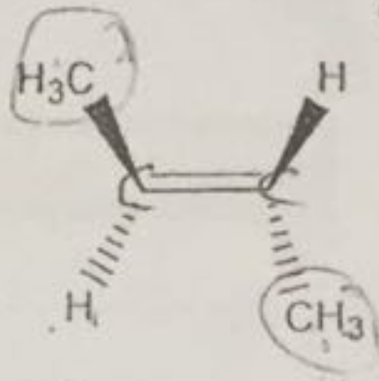

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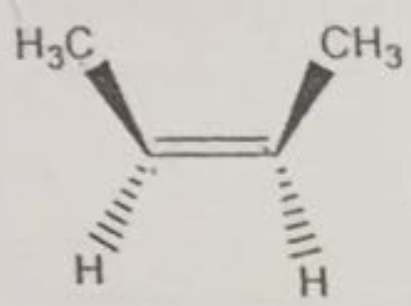

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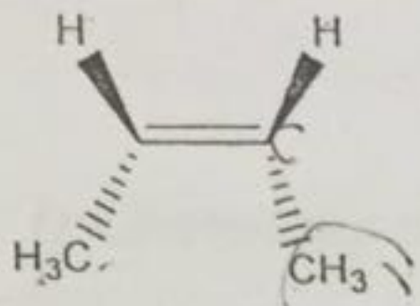

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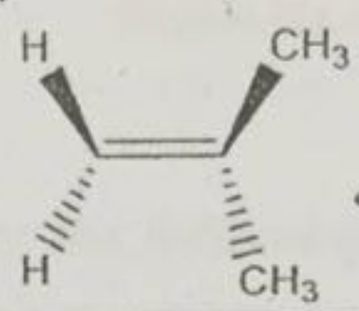

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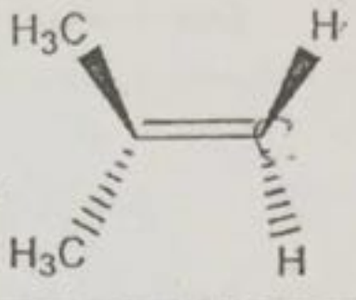


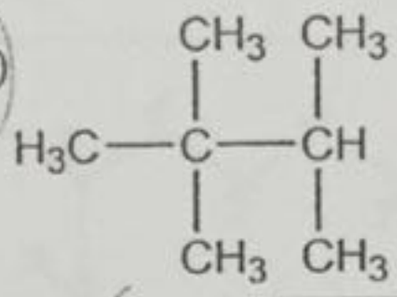
8- Which of the following alkanes would have the lowest boiling point? iv

i) $CH_3CH_2CH_2CH_2CH_2CH_2CH_3$

ii) $CH_3CH_2CH_2CH_2CHCH_3$ with CH_3 branch

iii) $CH_3CHCH_2CHCH_3$ with CH_3 and CH_3 branches

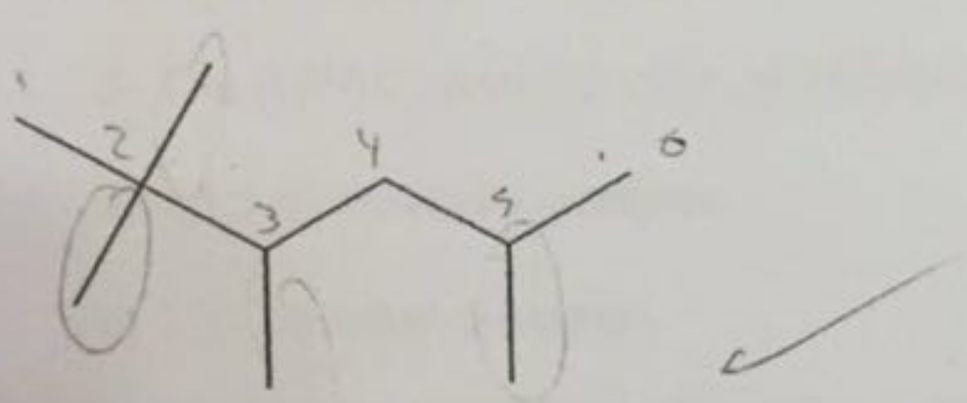
iv)



9- Which of the following hydrocarbons have acidic hydrogen? i

i) 1-Butyne ii) 2-Butene iii) 1-Butene iv) 2-Butyne

10- (2-*tert*-Butyl-4-methyl pentane) is incorrect name according to IUPAC rules correct it.



2,2,3,5-Tetramethylhexane

وبالله التوفيق،،،

Dr. Siham Lahsasni, Dr Shatha Alaqeel and Dr. Seham Al Terary

Dr. Nahed Nasser

كلية العلوم
قسم الكيمياء

الزمن : ساعة واحدة

١٤٣١ / ٧ / ٢٠ التاريخ :

الإختبار الفصلى الأول لمقرر : كيم
الفصل الدراسى الثانى

اسم الطالبة :

رقم الشعبة :

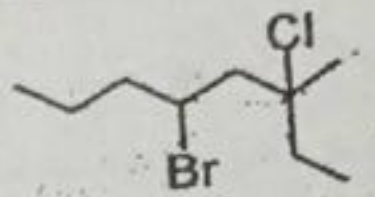
الرقم الجامعى :

الرقم المسلسل:

Choose the correct IUPAC names of the following structure:

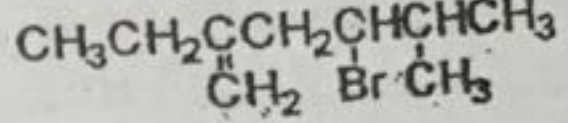
(A)

1- a) 5-Bromo-3-chloro-3-methyl octane.
b) 4-Bromo-6-chloro-6-ethyl heptane .
c) 4-Bromo-2-chloro-2-ethyl heptane .
d) 4-Bromo-6-chloro-6-methyl octane .



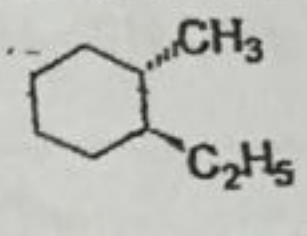
(B)

2- a) 3-Bromo-5-ethyl-2-methyl-5-hexene .
b) 4-Bromo-2-ethyl-5-methyl-1-hexene.
c) 3-Bromo-5-methylene-2-methyl heptane.
d) 5-Bromo-3-methylene-2-methyl heptane.



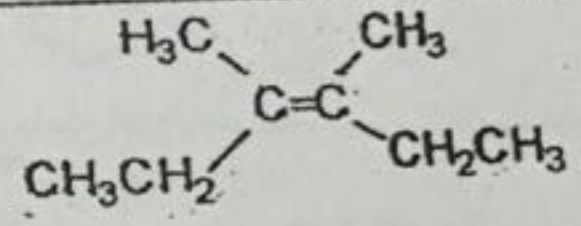
(B)

3- a) cis-1-Ethyl-2-methyl cyclohexane
b) trans-1-Ethyl-2-methyl cyclohexane .
c) cis-1-Methyl-2-ethyl cyclohexane .
d) trans-1-Methyl-2-ethyl cyclohexene .



(C)

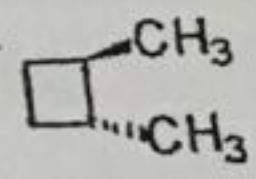
4- a) E- 3,4-Dimethyl 3-hexene .
b) trans-3,4-Dimethyl 3-hexene .
c) cis-3,4-Dimethyl 3-hexene .
d) cis-2,3-Diethyl 2-butene .



Choose the correct structure for each name .

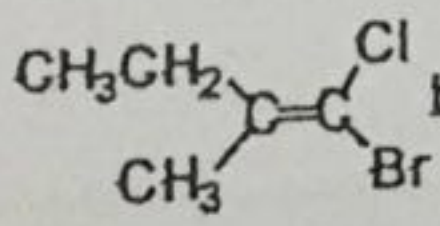
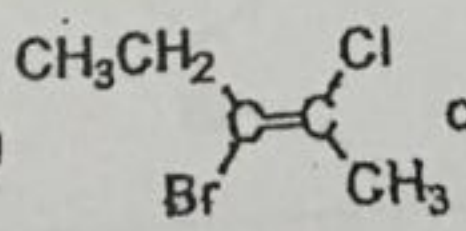
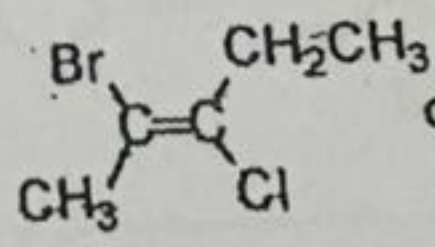
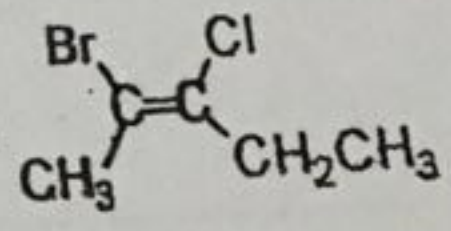
(B)

1- 2,2-Dimethyl butane

a) $CH_3CH(CH_3)CH_2CH_3$ b) $CH_3C(CH_3)_2CH_2CH_3$ c) $CH_3CH_2CH_2CH_2CH_2CH_3$ d) 

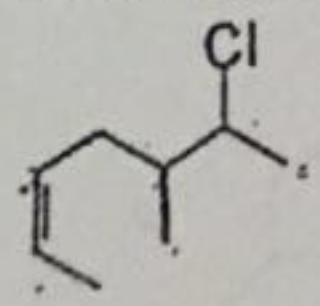
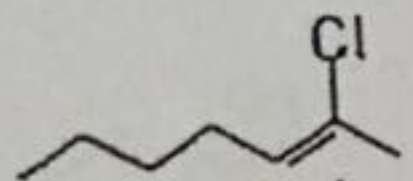
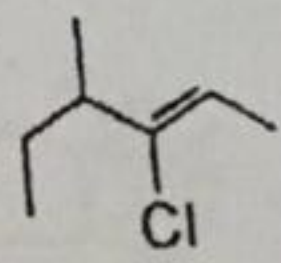
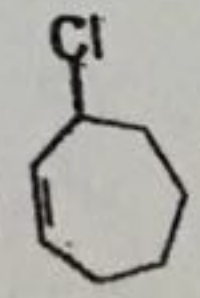
(D)

2- Z-2-Bromo-3-chloro-2-pentene

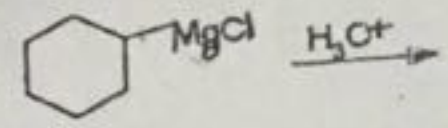
a) 
b) 
c) 
d) 

(A)

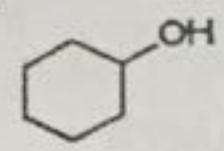
3- 6-Chloro-5-methyl-2-heptene

a) 
b) 
c) 
d) 

-3-



(1)

a) 

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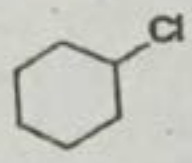
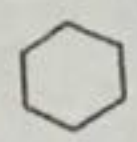
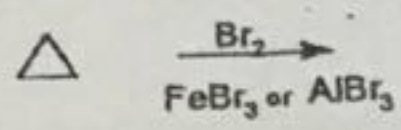
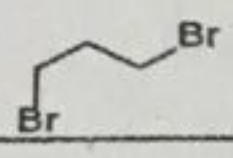
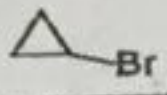
c) 

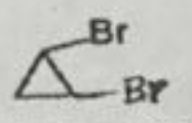
d) 

4- 

(A)

a) 

b) 

c) 

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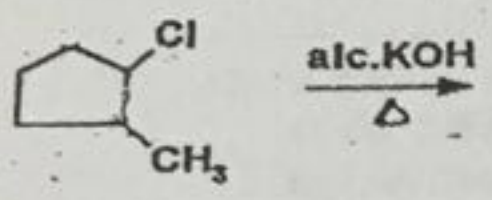
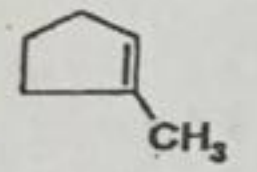
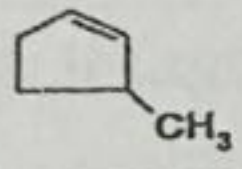
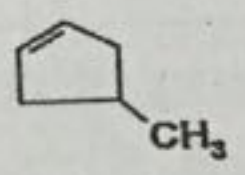
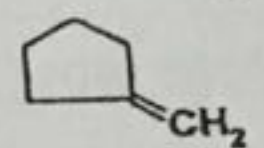
5- 

(A)

A) 

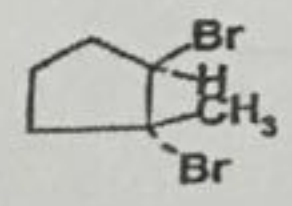
B) 

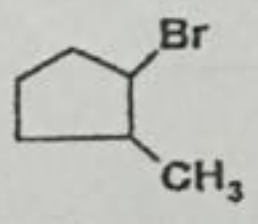
C) 

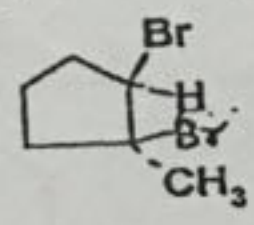
D) 

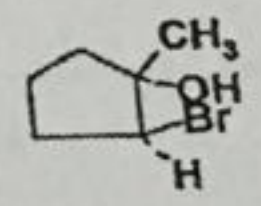
6- 

(A)

A) 

B) 

C) 

D) 

X_2 في CCl_4

Best-Wishes

trans

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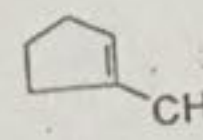
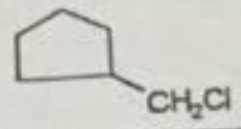
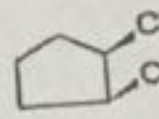
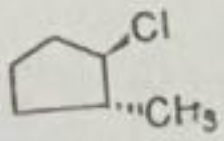
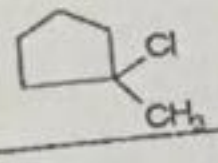


(D)

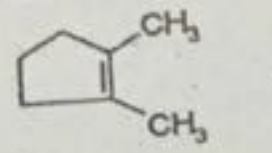
a) 

b) 

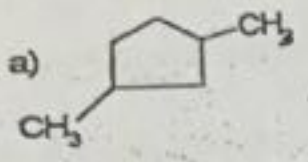
c) 

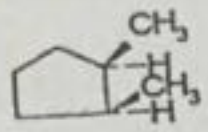
d) 

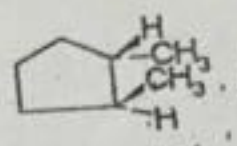
5-

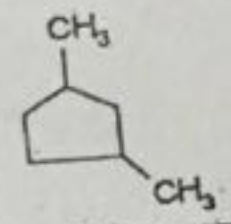


(B)

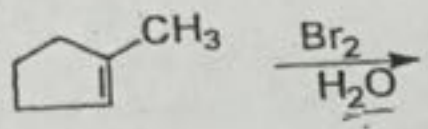
a) 

b) 

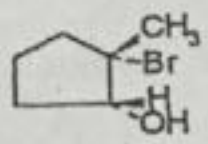
c) 

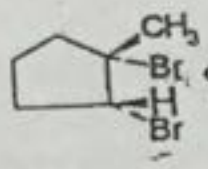
d) 

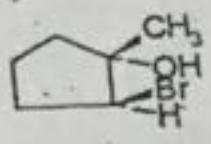
6-

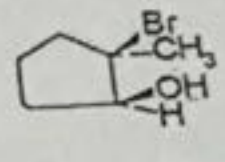


(C)

a) 

b) 

c) 

d) 

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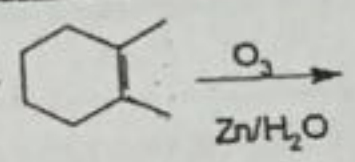
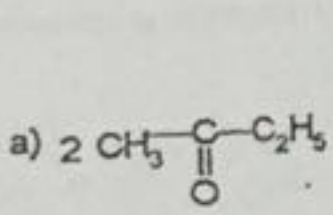
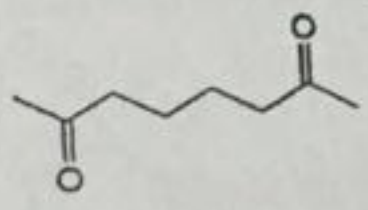
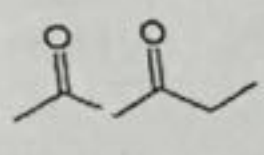
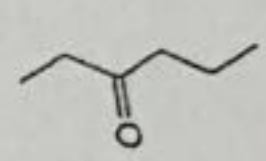


(B)

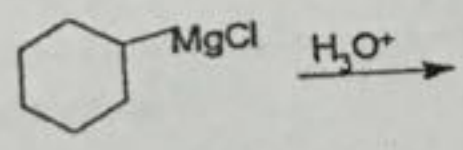
a) 

b) 

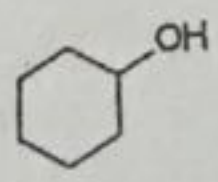
c) 

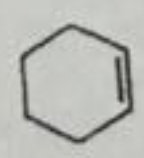
d) 

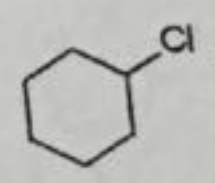
8-



(D)

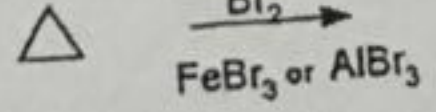
a) 

b) 

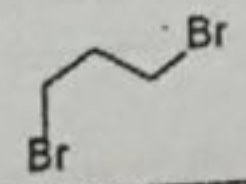
c) 

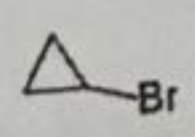
d) 

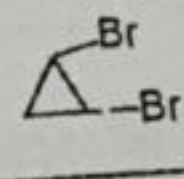
9-

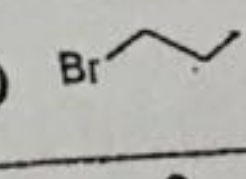


(A)

a) 

b) 

c) 

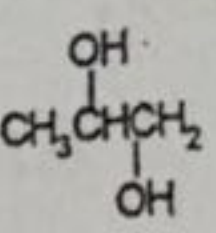
d) 

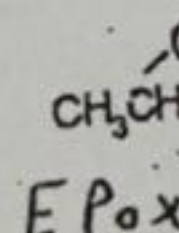
10-

$CH_3CH{=}CH_2 \xrightarrow{HCO_3H}$ HCOOOH RCOOH

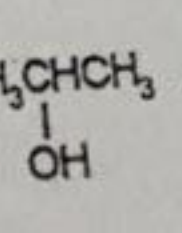
Per acide acid

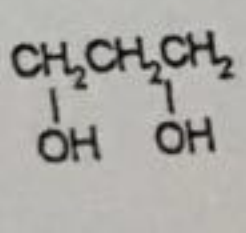
(E)

a) 

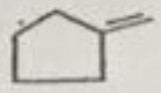
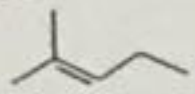
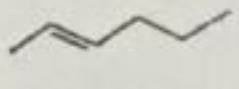
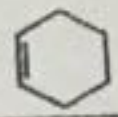
b) 

Epoxide

c) 

d) 

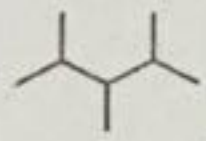
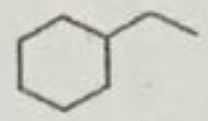
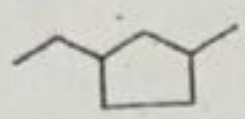
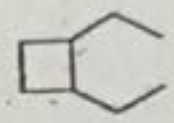
2-Methyl-2-pentene

a)  b)  c)  d) 

(B)

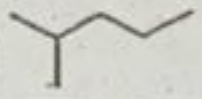
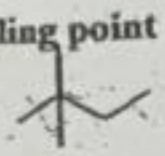
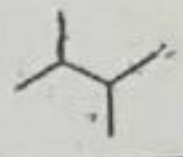
Choose the correct answer :-

1- The structural isomer of 2,4-Dimethyl hexane is:-

a)  b)  c)  d) 

(A)

2- Which of the following has the highest boiling point ?

a)  b)  c)  d) 

(A)

3- Which of the following alkene is most stable ?

a) $CH_2=CH-CH_3$ b) $CH_3-CH=CH-CH_3$ c) $CH_3-\underset{\underset{CH_3CH_3}{|}}{C}=C-CH_3$ d) $CH_2=CH_2$

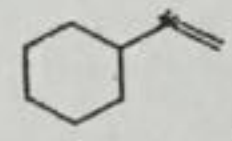
(C)

4- Which of the following compounds contain secondary C- atom?

a) CH_4 b) $CH_3\underset{\underset{CH_3}{|}}{C}HCH_3$ c) CH_3-CH_3 d) $CH_3-CH_2-CH_3$

(D)

5- The hybridization of the C- marked * is



a) sp3 b) sp2 c) sp d) s

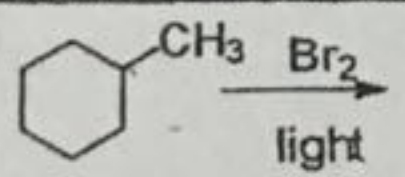
(B)

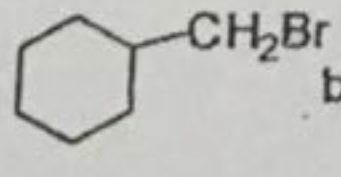
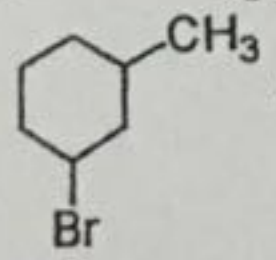
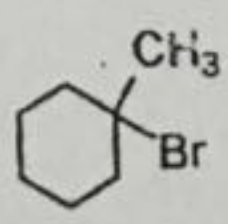
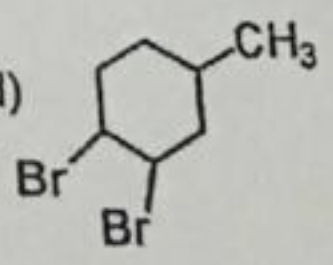
6- The bond length between $CH_3-CH=CH-CH_3$ (=) is :-

a) 1.54A° b) 1.34A° c) 1.20 A° d) 1.09 A°

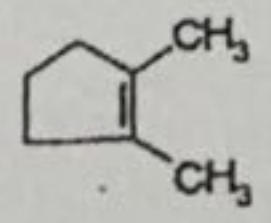
(B)

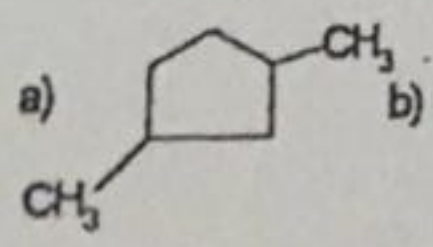
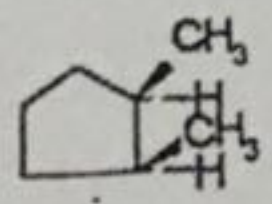
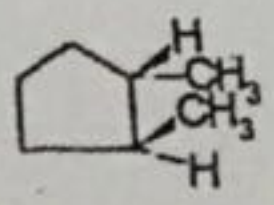
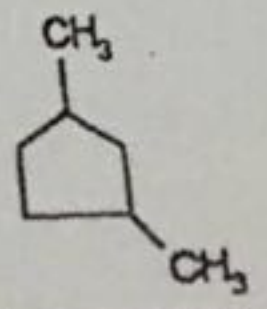
Choose the correct major product from each equation:-

1- 

a)  b)  c)  d) 

(C)

2- 

a)  b)  c)  d) 

(B)

الحلول

(Corrected Exam (not done) for Mid I 2013)

answered by Dr/ Emad Elgallad

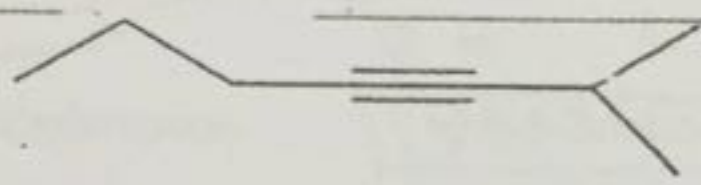
King Saud University (The Preparatory Year)

Chem.: 145 **Midterm I *** **Time: 1 hour**

Name: ---------- **St. No. (----------)**

Group NO. (----------) **Serial No.(----------)**

I) Choose the correct answer for the following:

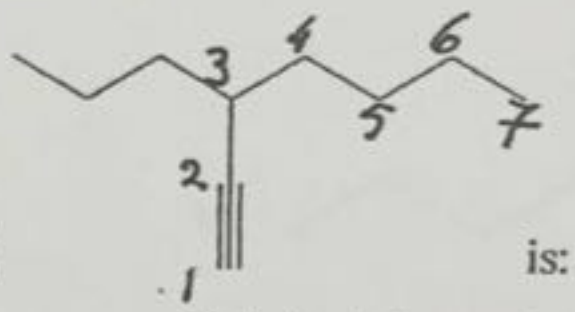
1- The common name for  is:

a) 6-Methyl-4-heptyne .

b) Isopropylpropylacetylene.

c) 2-Methyl-3-heptyne.

d) Propylisopropylacetylene.

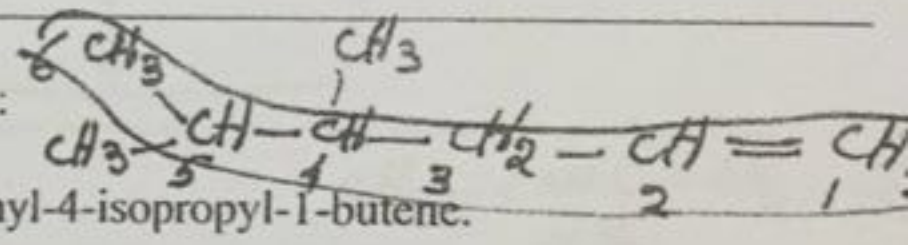
2- The IUPAC name for this compound  is:

a) 3-Butylhexyne.

b) 4-Acetyleneoctane.

c) 3-Propyl-1-heptyne.

d) Octylacetylene.

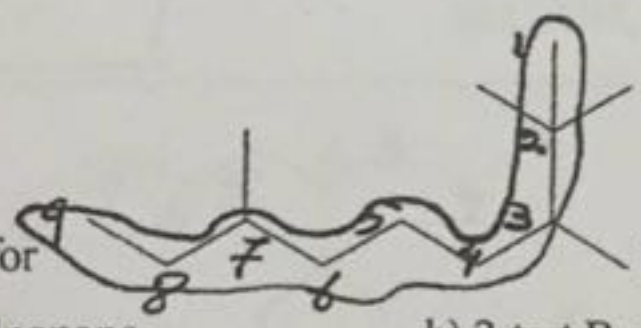
3- The IUPAC name for $(CH_3)_2CHCH(CH_3)CH_2CH{=}CH_2$ is : 

a) 4,5,5-Trimethyl-1-pentene.

b) 4-Methyl-4-isopropyl-1-butene.

c) 2,3-Dimethyl-5-hexene.

d) 4,5-Dimethyl-1-hexene.

4- The IUPAC name for  is:

a) 3,7,8,8-Tetramethylnonane.

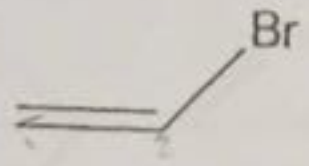
b) 2-tert.Butyl-5-methyloctane.

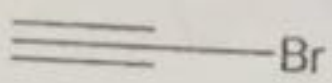
c) 2,2,3,7-Tetramethylnonane.

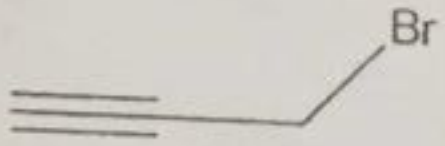
d) 5-Methyl-2-tert.butyloctane

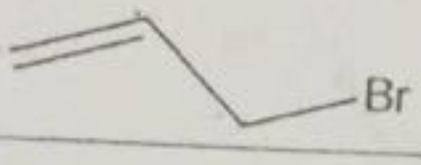
This exam is 3000 easy :)

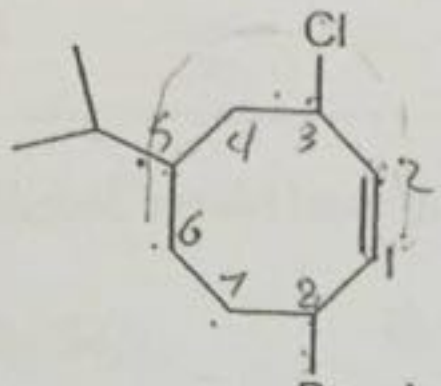
3- The structure of vinyl bromide is: i

i) 

ii) 

iii) 

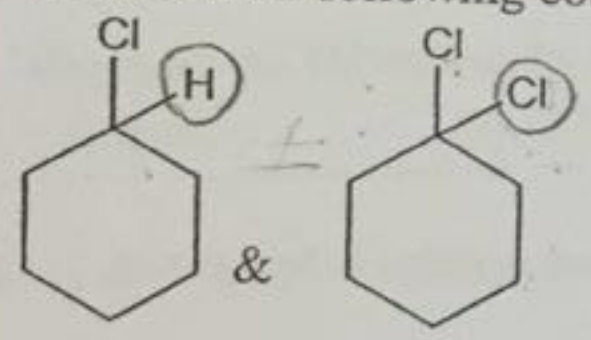
iv) 

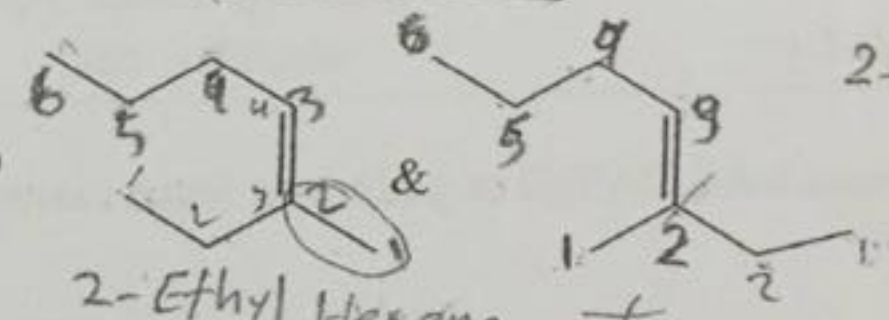


4- The IUPAC name for Br is: iii

i. 1-Bromo-4-chloro-6-isopropyl-2- cyclooctene.
ii. 6-Bromo-1-chloro-3-isobutyl-7-cyclooctene.
iii. 8-Bromo-3-chloro-5-isopropyl-1-cyclooctene.
iv. 3-Bromo-8-chloro-6-isopropyl-1-cyclooctene.

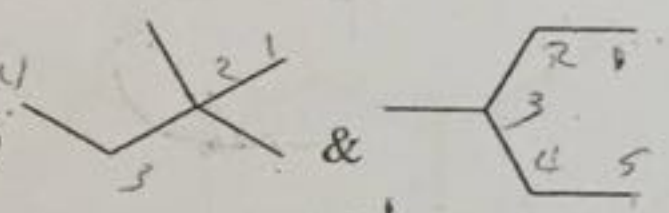
5- Which of the following couple of molecules are structural isomers? iii

i) 

ii) 

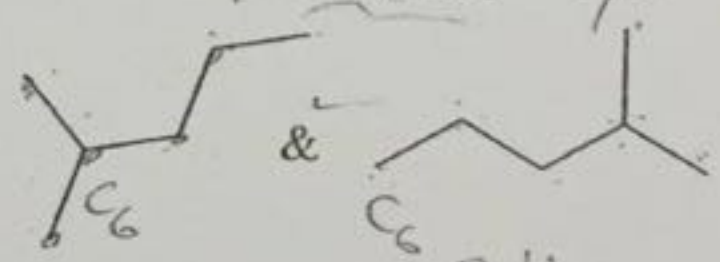
2-Ethyl Hexene

2-Ethyl Hexene

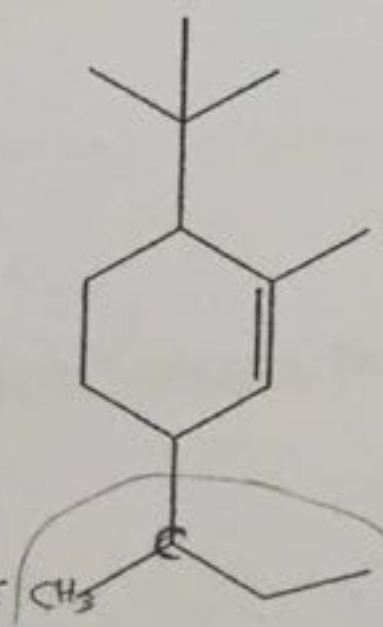
iii) 

2,2-dimethyl butane

3-Methyl pentane

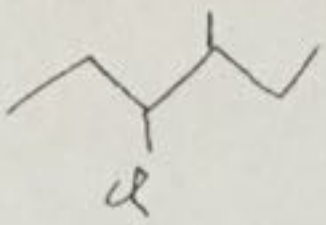
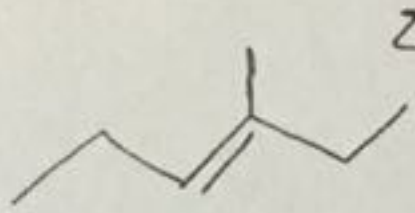
iv) 

2-Methyl Pentane ≠ 2-Methy Pentane

6- The IUPAC name for  is: iv

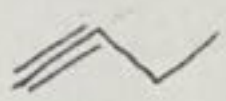
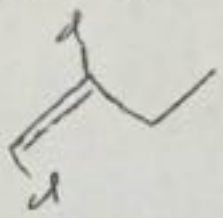
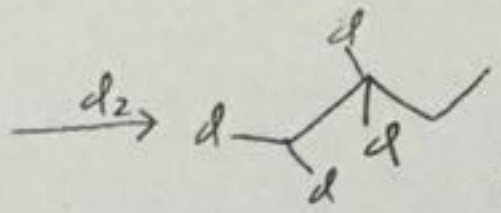
i) 2-Methyl-3-*tert*-butyl-6- *sec.* butylcyclohexene.
ii) 1-*sec*-Butyl-4-*tert*-butyl-3-methyl-2-cyclohexene.
iii) 1-*tert*-butyl-4-*sec*-butyl-2-methyl-2- cyclohexene.
iv) 3-*sec*-Butyl-6-*tert*-butyl-1-methylcyclohexene.

Medterm 1430

/ ④  HX نزع (سايتزف) 

هذا الصح

3-methyl-3-hexene

! ⑤  Cl_2  Cl_2 

هذا الصح

1,1,2,2 tetra chloro butane

Name: ----------

Group. NO. (----------)

St. No. (----------)

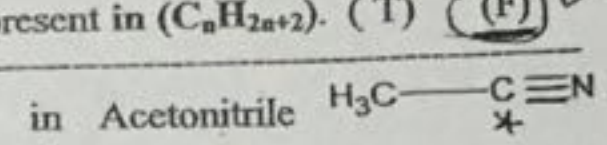
Serial No.(----------)

I) Detect if the following statement is true or fouls?

2.

1) **Shortest bond length** between two carbons is present in (C_nH_{2n+2}). (T) (F) ✓

الصح هو أطول — ألكان

2) The **hybridization** of the carbon atom in Acetonitrile  is sp^2. (T) (F) ✓

(sp) الصح هو

3) **Boiling point** of 5-methylnonane is **higher** than decane. (T) (F) ✓

الصح هو أقل (متفرع أكثر) — نفس الوزن بشوف التفرع

3 1

4) **Dehydrohalogenation** of 3-Choro-4-methylhexane will **produce** 3-Methyl-4-hexene. (T) (F) ✓

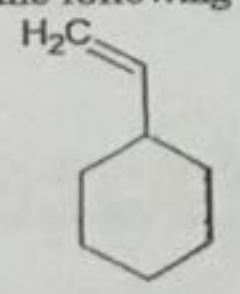
HX نزع — 10 C — 10 C

الصح هو 3-methyl-3-hexene

5) Addition of **two mole of chlorine** to **butyne** will produce 1,2-Dichlorobutane.

(T) (F)

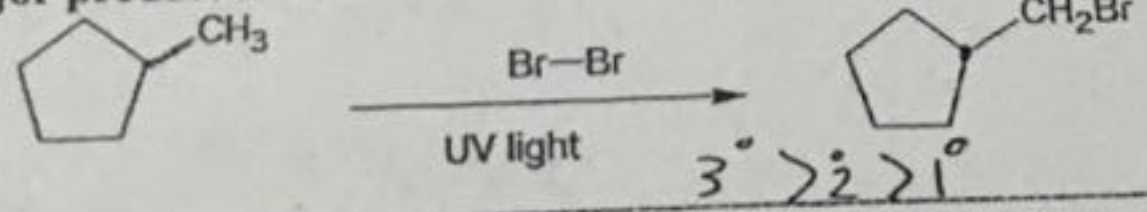
6) The **common name** of the following compound is **Allylcyclohexane**



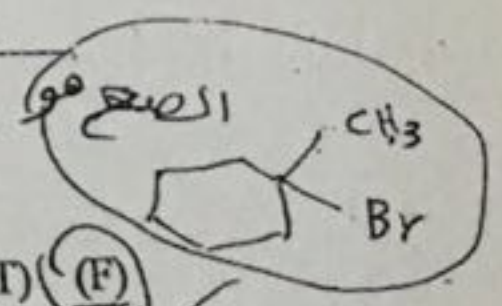
الصح هو vinyl

(T) (F)

7) The **major product** of this reaction is:



الصح هو



(T) (F)

8) The **Energy** produced from the combustion of methane with O_2 is 213Kcal/mol

CH_4

(T) (F) غير مطلوب

الصح هو فقط

9) **Geometrical** isomerism can be **found** in straight chain **alkyne**. (T) (F)

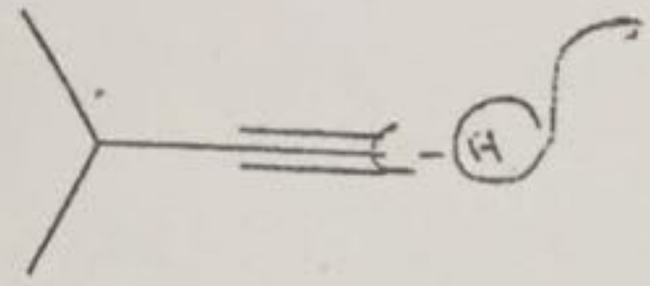
فقط في الألكينات والألكانات الحلقية

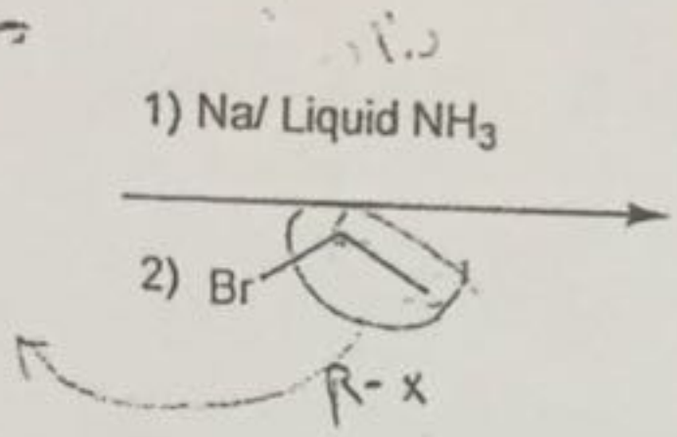
10) **Isomers** are compounds have the **different molecular formula**. (T) (F)

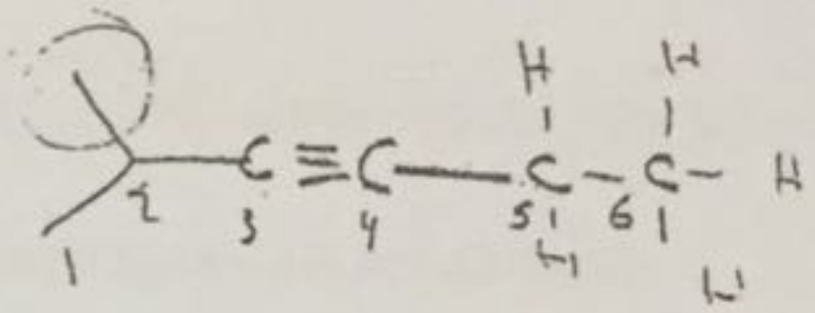
isomers لهم نفس عدد الذرات وبالتالي لهم نفس الصيغة الجزيئية molecular formula

I) Choose the correct answer or the major product for the following reactions:

1.







(a) 5-Methyl-hex-3-yne

(b) 1,1-Dimethyl-2- pentyne

(c) 2-Methyl-hex- 3-yne

(d) 5,5-Dimethyl-3- pentyne

2.

$(CH_3CH_2CH_2)_2CuLi$ + CH_3CH_2-Cl ⟶ ?

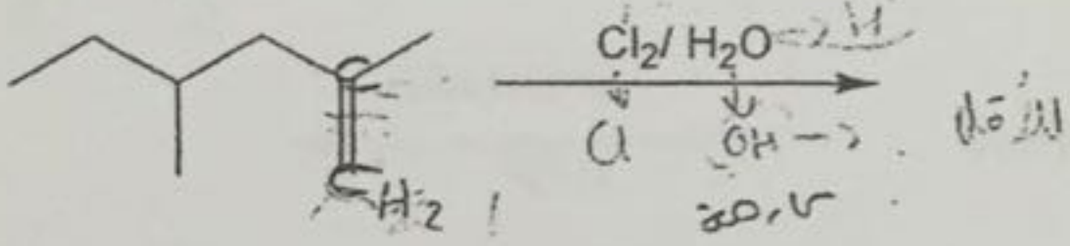
(a) $CH_3CH_2CH_3$

(b) CH_3CH_3

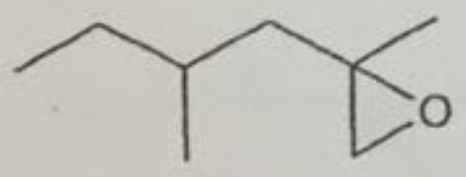
(c) $CH_3CH_2CH_2CH_2CH_2CH_2CH_2CH_3$

(d) $CH_3CH_2CH_2CH_2CH_3$

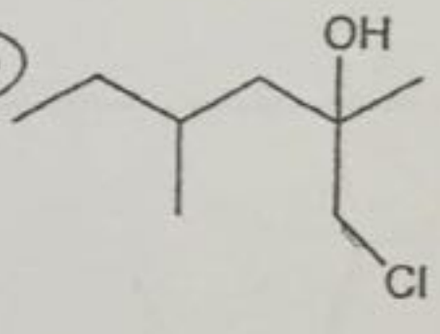
3.



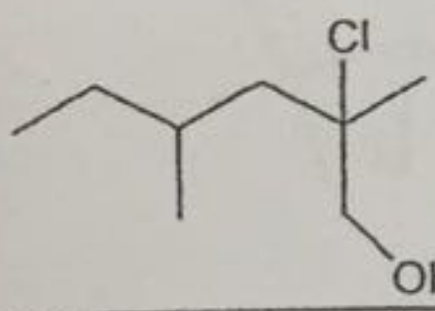
(a)



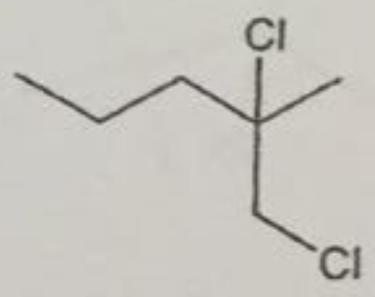
(b)



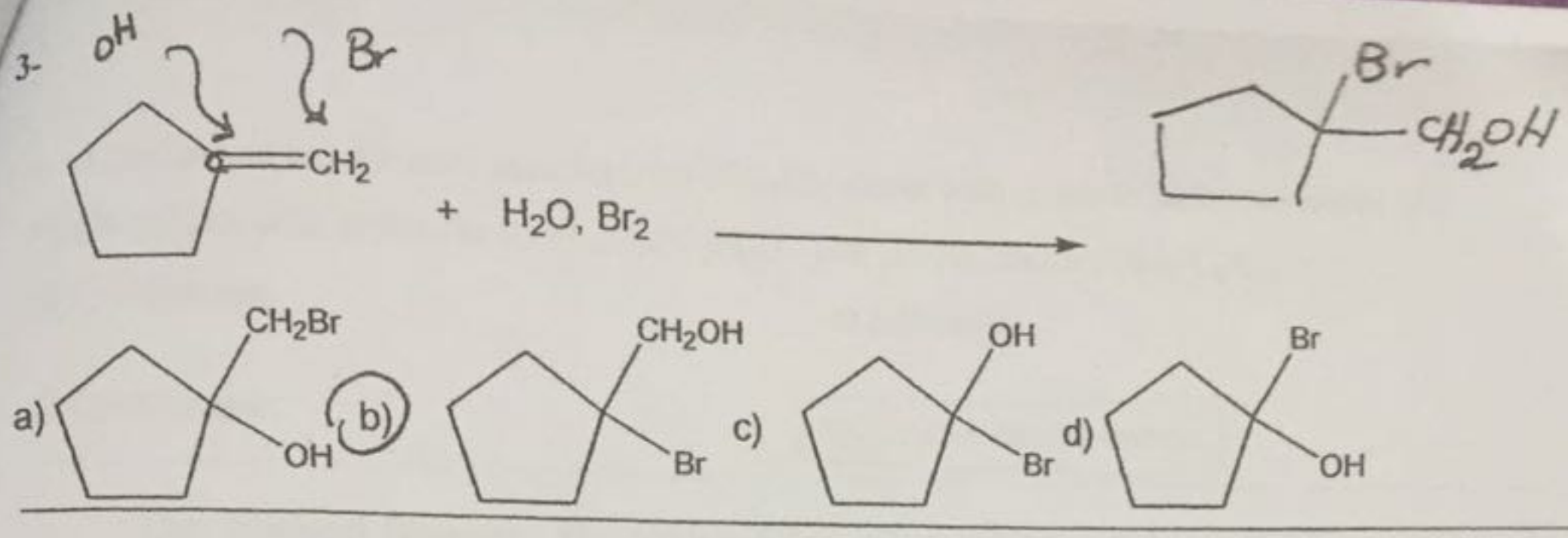
(c)



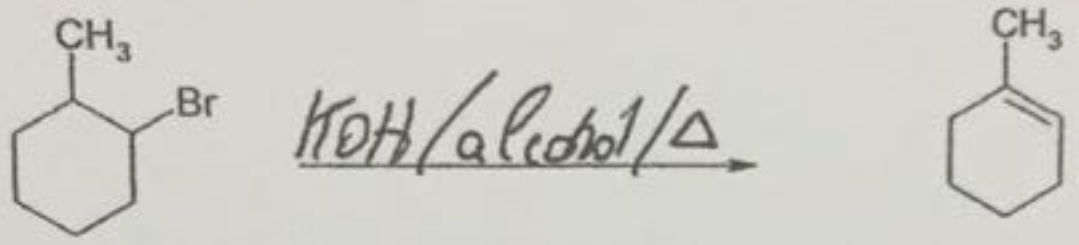
(d)



$CH_3CH_2CH_2-CH_2CH_3$

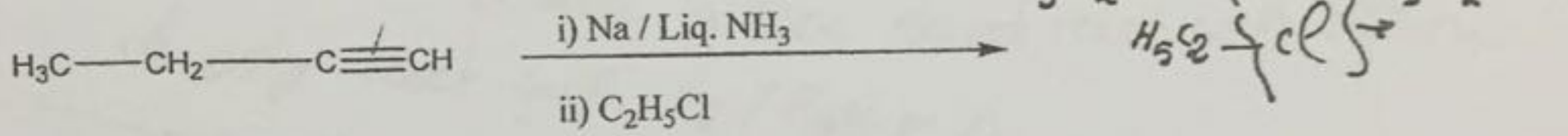
3- 

4- What is the best reagent used for the following reaction?



a) Conc H_2SO_4 b) KOH/Alcohol/heat c) Zn/acetic acid d) Br_2, H_2O

5-



a) $H_3C—CH_2—C(Cl)=CHCl$

b) $H_3C—CH_2—C(Na)=CH-NH_2$

c) $H_3C—CH_2—C(Cl)=CH-C_2H_5$

d) $H_3C—CH_2—C\equiv C-C_2H_5$

(IV) Bonus:

1. Which of the following is the correct IUPAC name for the compound that has the molecular formula C_4H_9Cl?

a) 3-Chlorobutane.

b) 1-Chloro-2-methylpropane.

c) 2-Chloro-2-methylbutane

d) 1-Chloro-3-methylpropane.

2. A compound has the molecular formula of C_6H_{12} reacts with ozone to yield two moles of a single product with molecular formula of C_3H_6O. The IUPAC name of this C_6H_{12} is :

a) Cyclohexane.

b) 2-Hexene.

c) Cyclohexene.

d) 2,3-Dimethyl-2-butene.

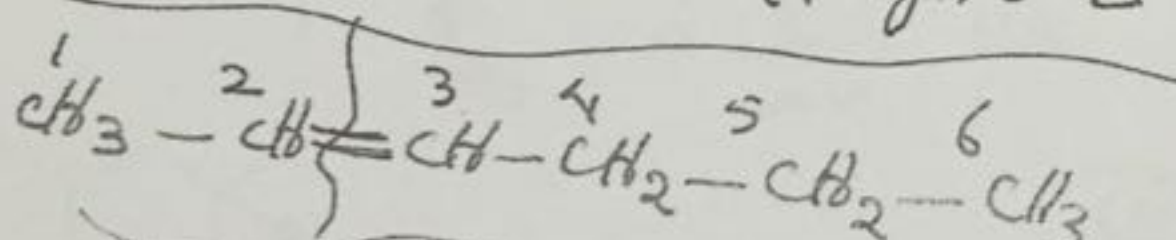
Dr. Nahed Nasser, Dr Noha Elnagdi and Dr. Siham Lahsasni

وبالله التوفيق،،،

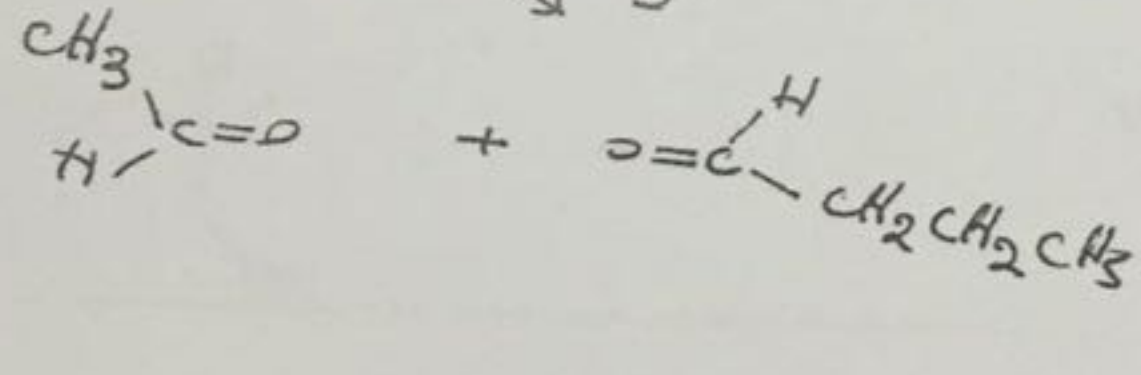
sy (a) bis because alkane dond react with ozone it only react with X_2 / light or Δ

(b)

sy



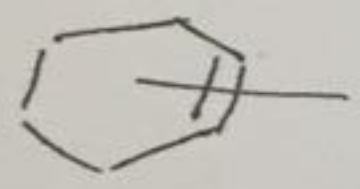
$\xrightarrow{O_3/Zn/H_3O^+}$



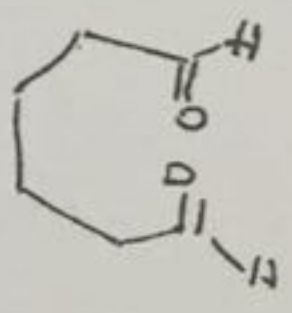
not same single product

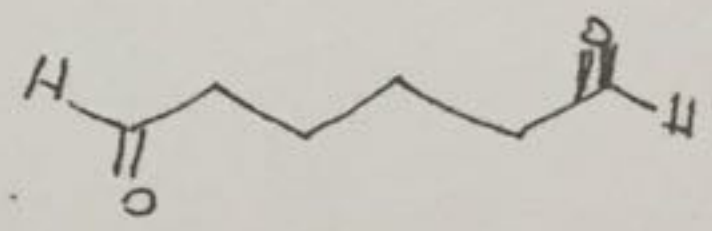
(c)

sy



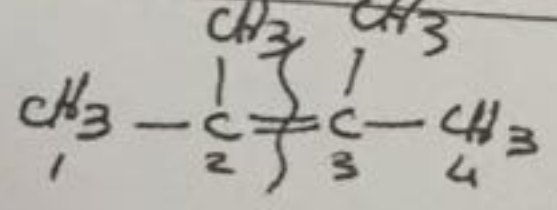
$\xrightarrow{O_3/Zn/H_3O^+}$



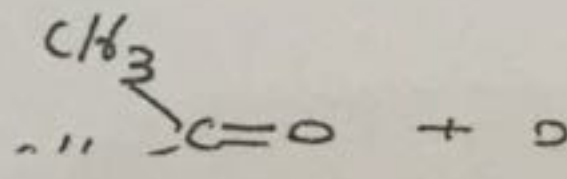


not C_3H_6O

(d)



$\xrightarrow{}$

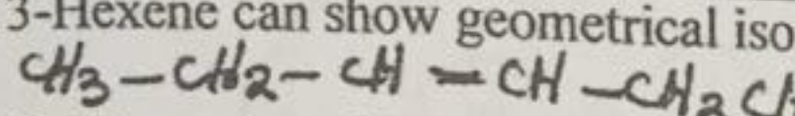


Same Product

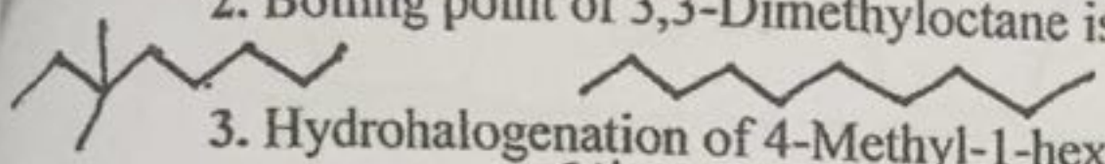
c) 1,1,3,3-Tetramethylpentane. d) 3,3,5-Trimethylhexane.

II) State whether the following statements are true or false

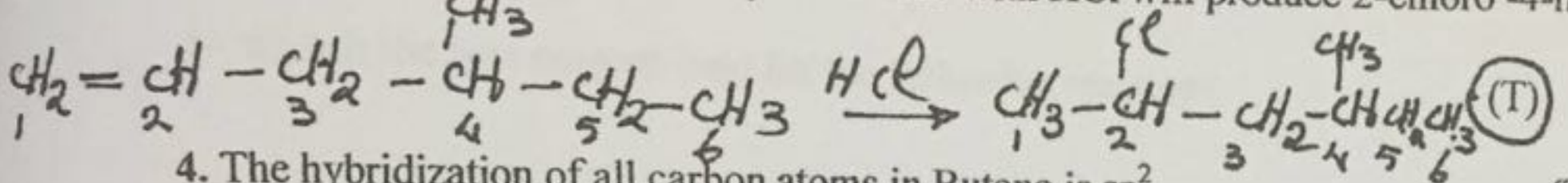
1. 3-Hexene can show geometrical isomerism while 2-methyl-2-butene cannot. (T) (F).



2. Boiling point of 3,3-Dimethyloctane is higher than decane. (T) (F)

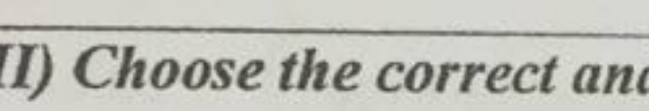


3. Hydrohalogenation of 4-Methyl-1-hexene with HCl will produce 2-chloro -4-methylhexane.



(T) (F).

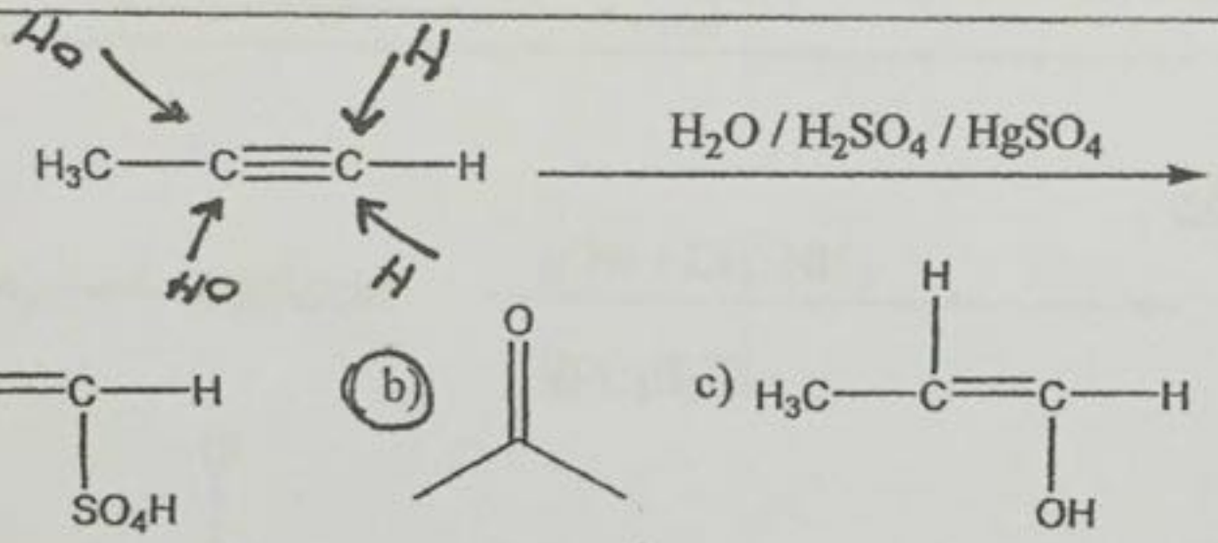
4. The hybridization of all carbon atoms in Butene is sp^2 (T) (F)



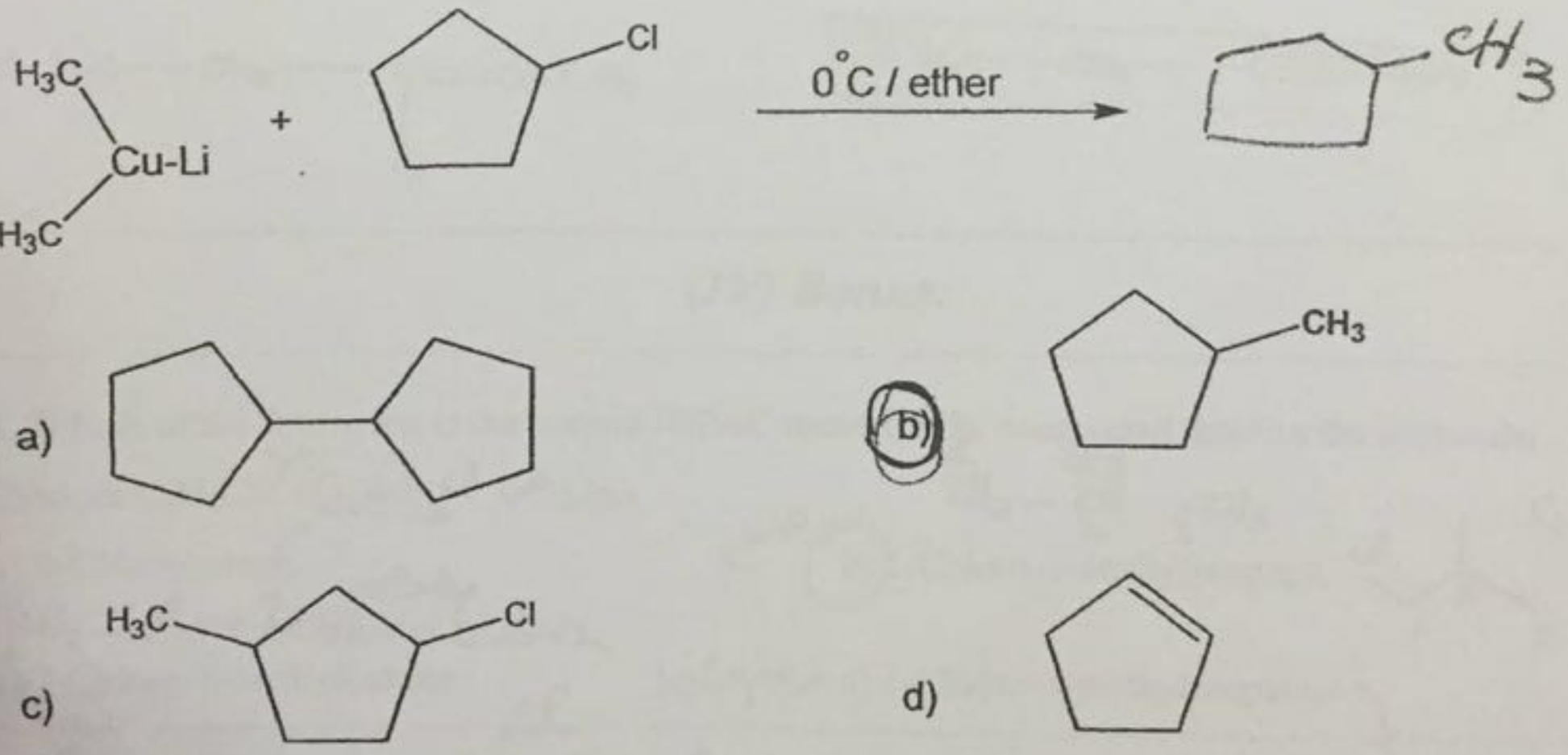
5. The sigma bond between hydrogen and carbon atoms in acetylene is made by overlap of sp^2 hybridized orbital of a carbon atom with 1S orbital of hydrogen atom. (T) (F).

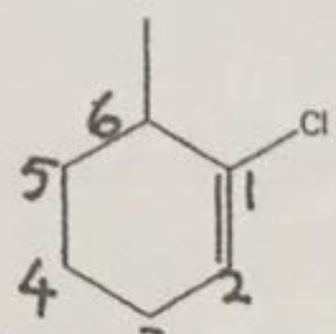
III) Choose the correct and the major product for the following reactions:

1-



2-





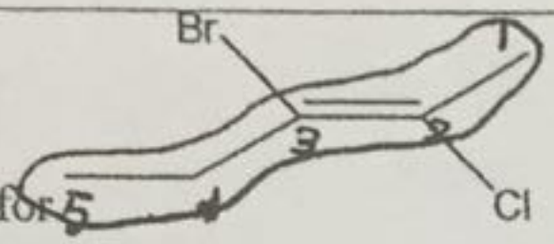
5- The IUPAC name for is:

a) 2-Chloro-3-methylcyclohexene.

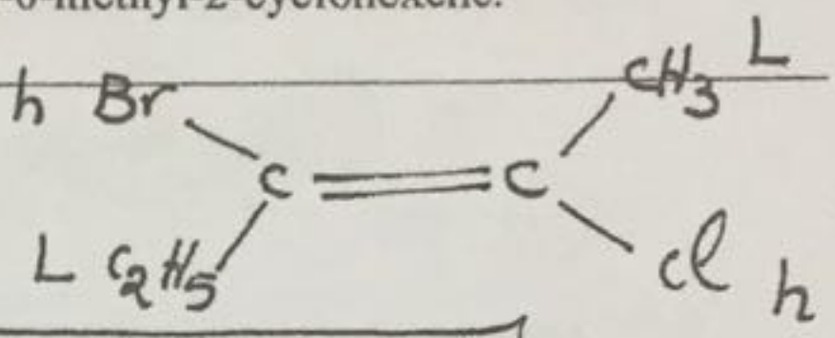
b) 2-Chloro-3-methyl-2-cyclohexene.

c) 1-Chloro-6-methylcyclohexene.

d) 1-Chloro-6-methyl-2-cyclohexene.



6- The IUPAC name for is:



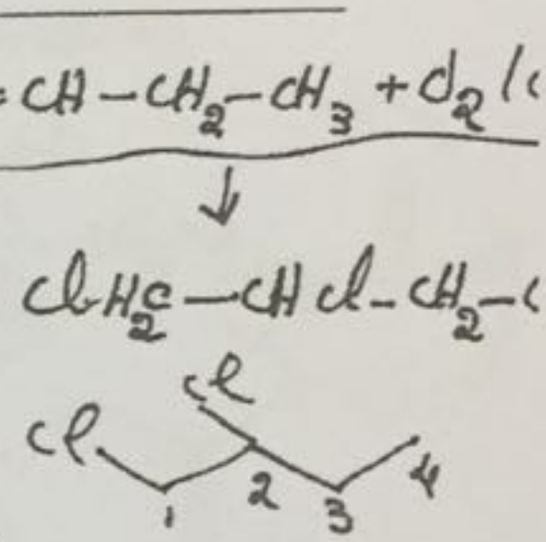
a) E-1-Bromo-2-chloro-1-ethylpropene.

b) E-3-Bromo-2-chloro-2-pentene.

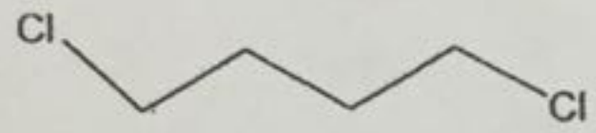
c) Z-3-Bromo-2-chloro-2-pentene.

d) Z-1-Bromo-2-chloro-1-ethylpropene

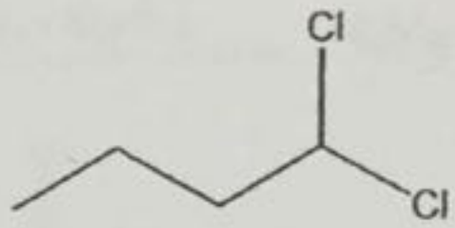
7- Which compound is a likely product from addition of Cl_2 to 1-butene?



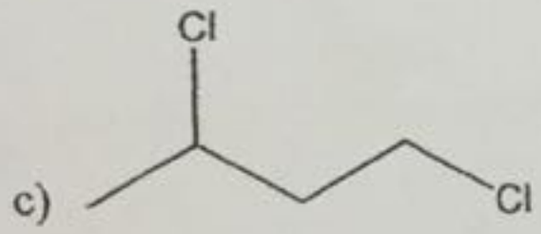
a)



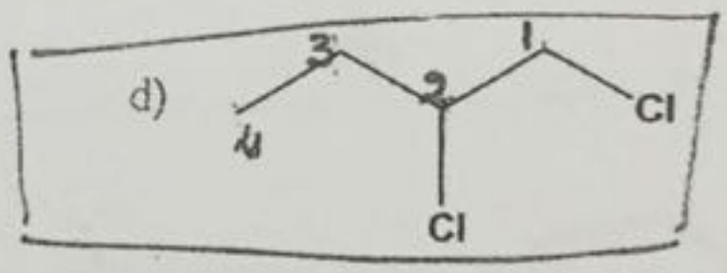
b)



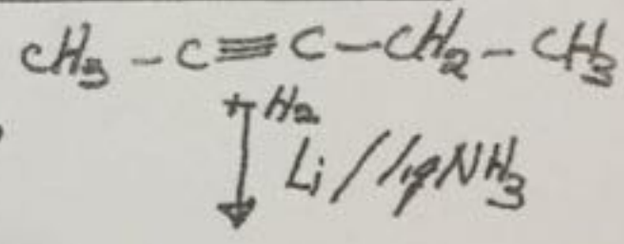
c)



d)



8- Which reaction conditions would best convert 2-pentyne to *trans*-2-pentene?

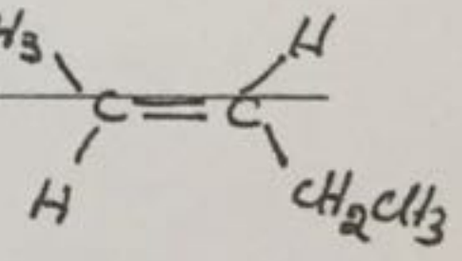


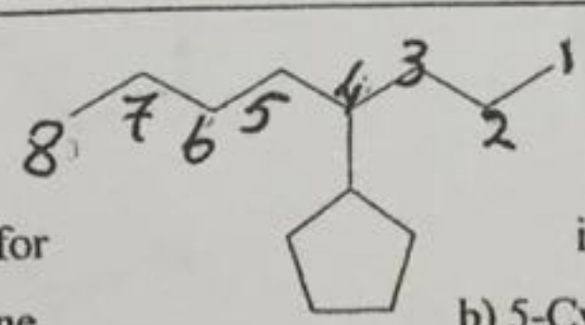
a) Pt catalyst and H_2.

b) Pd($BaSO_4$) catalyst and H_2.

c) Li in liquid NH_3 and H_2.

d) $LiAlH_4$ in dry ether.





9- The IUPAC name for is:

a) 4-Octylcyclopentane.

b) 5-Cyclopentyloctane.

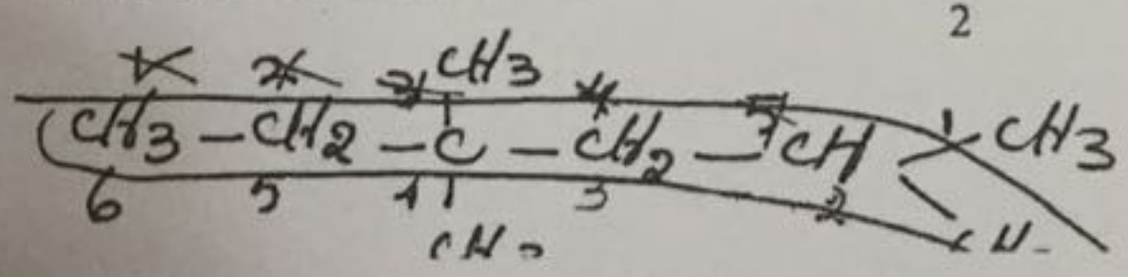
c) 4-Cyclopentyloctane.

d) 1-Cyclopentyl-1-propylbutane.

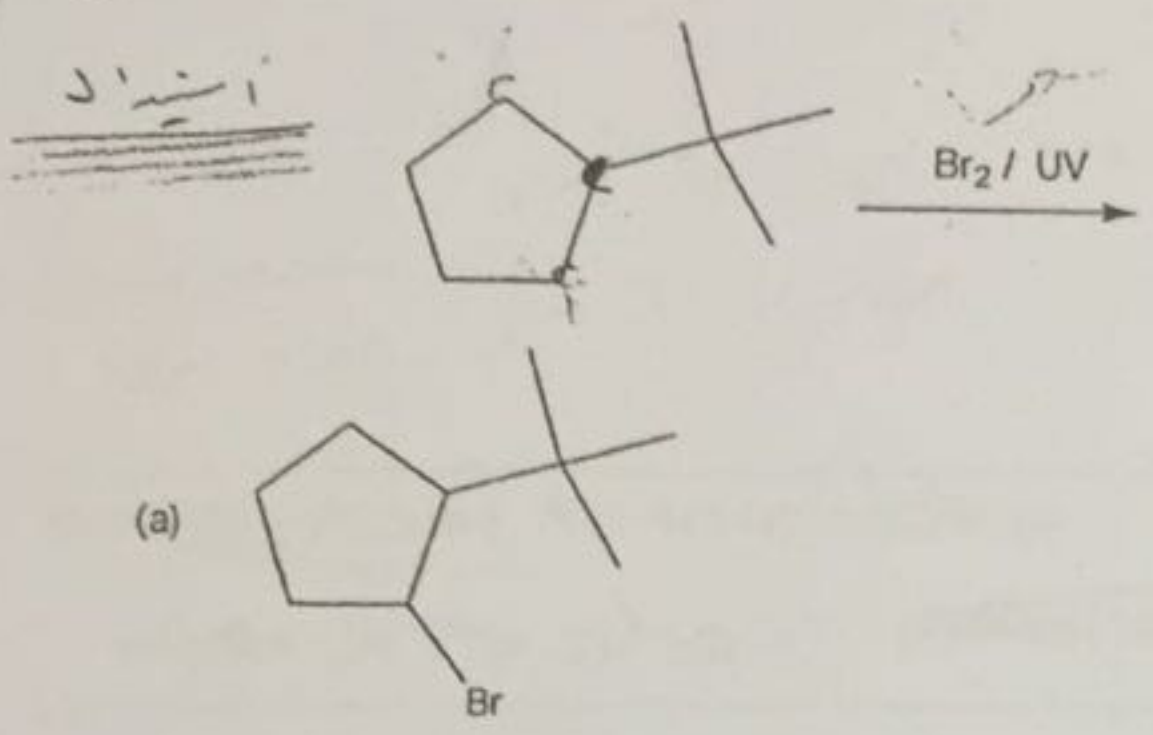
10- What is the IUPAC name for $CH_3CH_2C(CH_3)_2CH_2CH(CH_3)_2$?

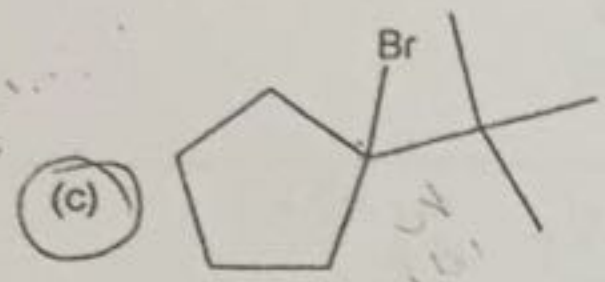
a) 2,4,4-Trimethylhexane.

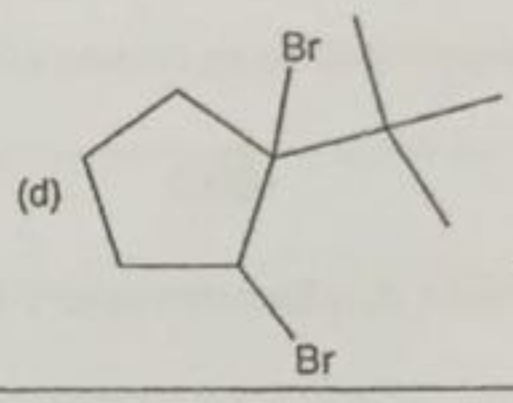
b) 2,2,5-Trimethylhexane.



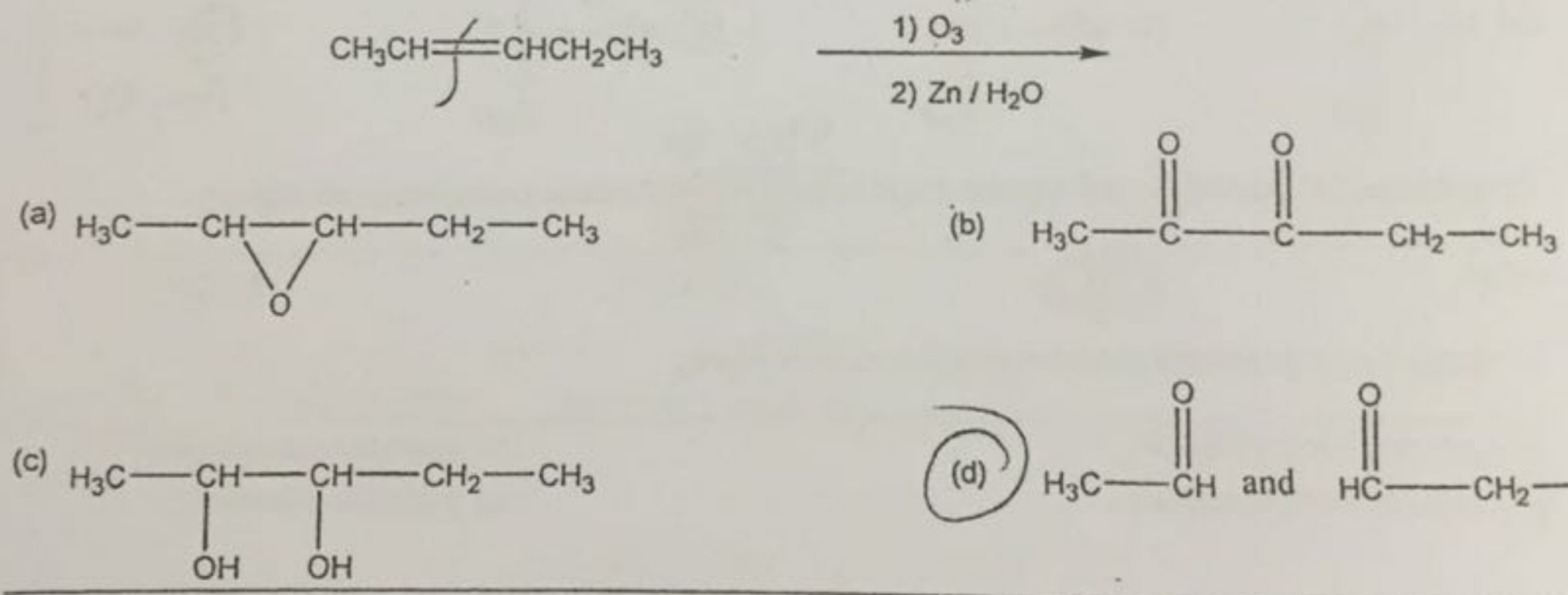
4.







5.



II) *Indicate which of the following statements is true and which is false*

6. Oxygen atom has one lone pair of electrons — Ö — (T) (F)

7. Cyclopentane is unstable compound (T) (F)

8. C≡C bond is shorter than C=C bond (T) (F)

جامعة الملك سعود - كلية العلوم – قسم الكيمياء

الاختبار الفصلى الثانى في مقرر ١٤٥ كيم (١٠-٦-١٤٣١هـ)

الزمن: ٩٠ دقيقة

أسم الطالب: **رقم الطالب:**

نموذج الأجابة:

ملاحظة هامة: تصحيح الإمتحان سيكون بناء علي الأجابة المكتوبة فى الجدول أسفل (حرف الإجابة الصحيحة) ولن ينظر الى بقية الأوراق والتي تعتبر مسودة .

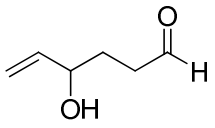
رقم السؤال	الإجابة	رقم السؤال	الإجابة
1		16	
2		17	
3		18	
4		19	
5		20	
6		21	
7		22	
8		23	
9		24	
10		25	
11		26	
12		27	
13		28	
14		29	
15		30	

جامعة الملك سعود - كلية العلوم – قسم الكيمياء

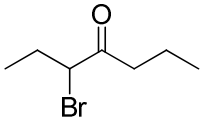
الاختبار الفصلى الثانى في مقرر ١٤٥ كيم (١٠-٦-١٤٣١هـ)

الزمن: ٩٠ دقيقة

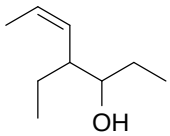
أسم الطالب: **رقم الطالب:**

1- The correct name of the following compound  is

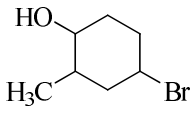
A) 3-hydroxyhexanal
B) 3-hydroxy-4-hexenal
C) 4-hydroxy-5-hexenal
D) 3-hydroxy-1-hexenal

2- The IUPAC name of  is:

A) 3-bromo-4-heptanone
B) 5-bromo-4-heptanone
C) 3-bromo heptanone
D) 4-bromo-3-heptanone

3- The IUPAC name of  is:

a) 4-Ethyl-5-heptyn-3-ol
b) 4-Ethyl-5-heptan-3-ol
c) 4-Ethyl-5-hepten-3-ol
d) 4-Ethyl-2-hepten-5-ol

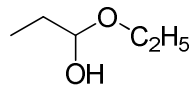
4- The IUPAC name of  is:

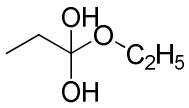
a) 3-Methyl-1-bromocyclohexanol
b) 2-Bromo-3-methylcyclohexanol
c) 4-Bromo-2-methylcyclohexanol
d) 3-Bromo-1-methylcyclohexanol

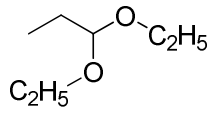
5- Addition of Grignard Reagent (RMgX) to ketone gives

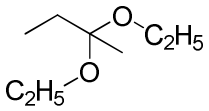
A) Primary alcohol
B) Secondary alcohol
C) Tertiary alcohol
D) Carboxylic acid

6- The structure of Acetal is:

A) 

B) 

C) 

D) 

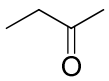
7- Reaction of phenyhydrazine with aldyhydes or ketones gives:

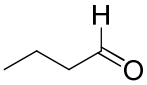
A) Oxime B) Phenylhydrazone C) Imine D) Hemiacetal

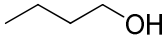
8- The common name of 2-methyl-2-propanol is:

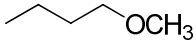
A) Allyl alcohol
B) Isopropyl alcohol
C) *tert*-Butyl alcohol
D) Benzyl alcohol

9- Which of the following compounds has the highest boiling point?

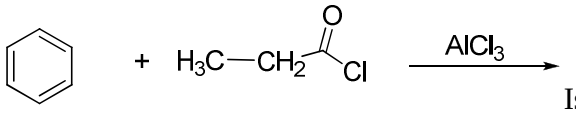
A) 

B) 

C) 

D) 

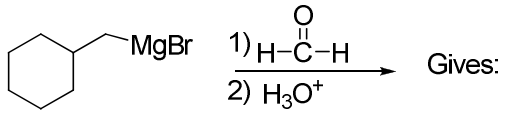
10- The product of the following reaction

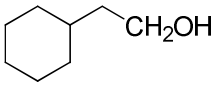


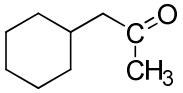
Is:

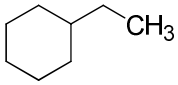
A) Acetophenone
B) Ethylphenyl ketone
C) Ethylbenzene
D) Phenylpropyl ketone

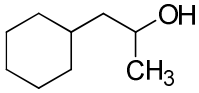
11- The following reaction gives



A) 

B) 

C) 

D) 

12- What is the structural formula of **A** in the following Reaction?

A $\xrightarrow{O_3/Zn/H_2O}$ $CH_3\text{-}CH_2\text{-}C(=O)H$ + $CH_3\text{-}C(=O)\text{-}CH_3$

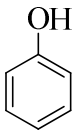
a) $CH_3\text{-}CH_2\text{-}CH{=}CH\text{-}CH_3$

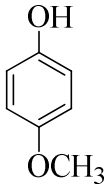
b) $CH_3\text{-}CH_2\text{-}C(CH_3){=}C(CH_3)\text{-}CH_2\text{-}CH_3$

c) $CH_3\text{-}CH_2\text{-}C(CH_3){=}C(CH_3)\text{-}CH_3$

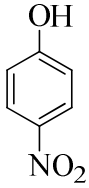
d) $CH_3\text{-}CH_2\text{-}CH{=}C(CH_3)\text{-}CH_3$

13- The most acidic compound is:

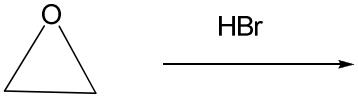
A) 

B) 

C) CH_3CH_2OH

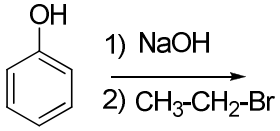
D) 

14- The following reaction gives



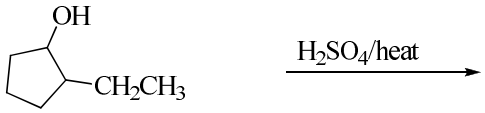
A) 2-bromoethanol B) Ethanol C) Ethane D) Bromoethane

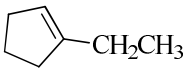
15- The following reaction gives:

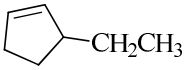


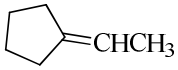
A) 4-Ethylphenol
B) 2-Ethylphenol
C) Ethylphenyl ether
D) Ethylphenyl ketone

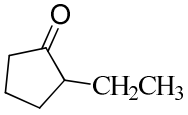
16- The main product from the following reaction is:

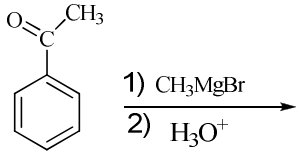


A) 

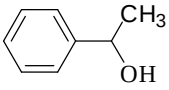
B) 

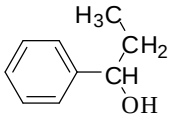
C) 

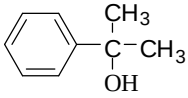
D) 

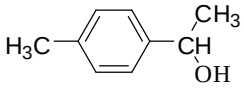
17- The following reaction 

gives:

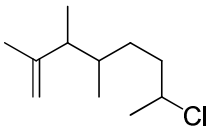
a) 

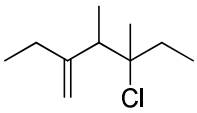
b) 

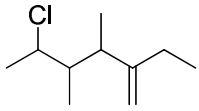
c) 

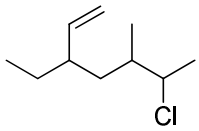
d) 

18- The structure of 5-Chloro-2-ethyl-3,4-dimethylhexene is:

A) 

B) 

C) 

D) 

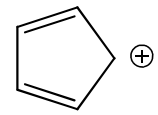
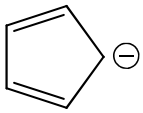
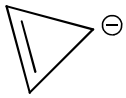
19- The reaction of Propyl bromide with NaOH is

A) Nucleophilic addition
B) Nucleophilic substitution
C) Electrophilic substitution
D) Electrophilic addition

20- Which of the following groups deactivate the benzene ring?

A) –OH B) –COOH C) $-NH_2$ D) $-OCH_3$

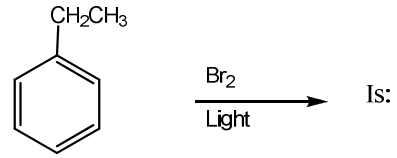
21- Which of the following compounds is aromatic?

A)  B)  C)  D) 

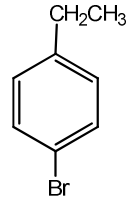
22- Bromination of the benzene ring is:

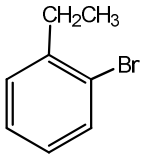
A) Electrophilic addition reaction..
B) Electrophilic substitution reaction.
C) Nucleophilic substitution reaction.
D) Nucleophilic addition reaction.

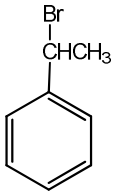
23- The main product of the following reaction

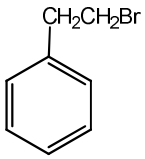


Is:

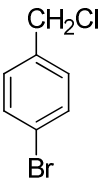
A) 

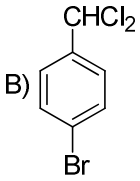
B) 

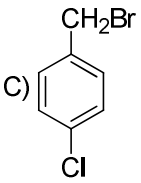
C) 

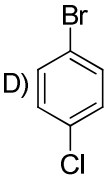
D) 

24- The structure of p-bromobenzylchloride is:

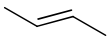
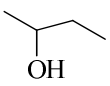
A) 

B) 

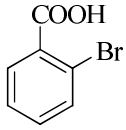
C) 

D) 

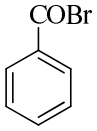
25- Which one of the following compounds undergoes the Electrophilic Substitution Reaction:

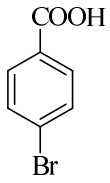
A)  B)  C)  D) 

26- Reaction of benzoic acid with $Br_2/AlBr_3$ gives:

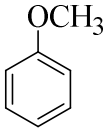
A) 

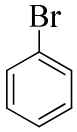
B) 

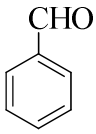
C) 

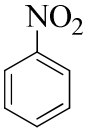
C) 

27- The most reactive compound towards sulphonation is

A) 

B) 

C) 

D) 

28- The most acidic alcohol is:

A) $CH_3CH_2CH_2$-OH

B) $CH_3\underset{\underset{OH}{|}}{C}HCH_3$

C) Cl_3C-CH_2-OH

D) $H_3C-\underset{\underset{OH}{|}}{\overset{\overset{CH_3}{|}}{C}}-CH_3$

29- The product of the following reaction is:

$$CH_3CH_2CH_2OH \xrightarrow{SOCl_2}$$

A) Propene

B) Dipropyl ether

C) 2-chloropropane

D) 1-chloropropane.

30- The product of the following reaction is:

$$CH_3\underset{\underset{CH_3}{|}}{C}HOCH_2CH_3 + 2\ HI\ (excess) \xrightarrow{Heat}$$

A) Ethanol and propanol
B) Ethyl iodide and water
C) Isopropyl iodide and water
D) Isopropyl iodide , ethyl iodide and water

جامعة الملك سعود - كلية العلوم – قسم الكيمياء

الاختبار الفصلي الثاني في مقرر 145 كيم (1432-1431هـ)

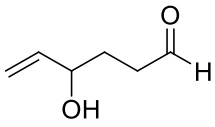
الزمن:

أسم الطالب: **رقم الطالب:**

نموذج الإجابة:

ملاحظة هامة: تصحيح الامتحان سيكون بناء علي الإجابة المكتوبة في الجدول أسفل (حرف الإجابة الصحيحة) ولن ينظر إلى بقية الأوراق والتي تعتبر مسودة .

رقم السؤال	الإجابة	رقم السؤال	الإجابة
1		14	
2		15	
3		16	
4		17	
5		18	
6		19	
7		20	
8		21	
9		22	
10		23	
11		24	
12		25	
13			

1- The correct name of the following compound  is:

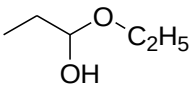
A) 3-hydroxyhexanal

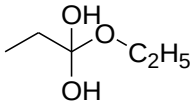
B) 3-hydroxy-4-hexenal

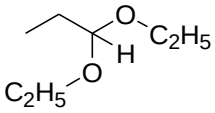
C) 4-hydroxy-5-hexenal

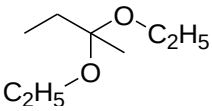
D) 3-hydroxy-1-hexenal

2- The structure of Acetal is: C

A) 

B) 

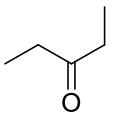
C) 

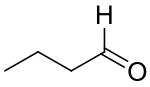
D) 

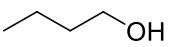
3- Reaction of phenyhydrazine with carbonyl compounds (aldyhydes or ketones) gives:

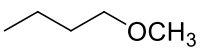
A) Oxime B) Phenylhydrazone C) Imine D) Hemiacetal

4- Which of the following compounds has the highest boiling point? C

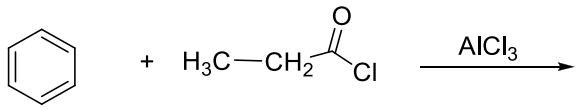
A) 

B) 

C) 

D) 

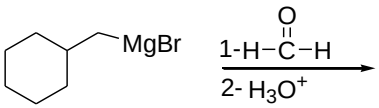
5- The product of the following reaction

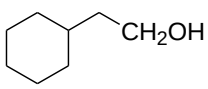


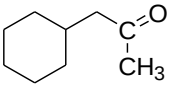
Is:

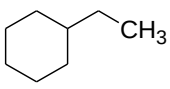
A) Acetophenone B) Ethylphenyl ketone C) Benzenepropanone D) Propiophenone

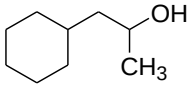
6-The following reaction gives: A



A) 

B) 

C) 

D) 

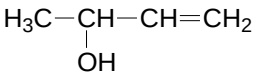
7. Addition of Grignard compound to acetone gives:

A) Primary alcohol
B) Secondary alcohol
C) Tertiary alcohol
D) Alkane

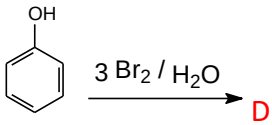
8. Addition of Amine to carbonyl group is:

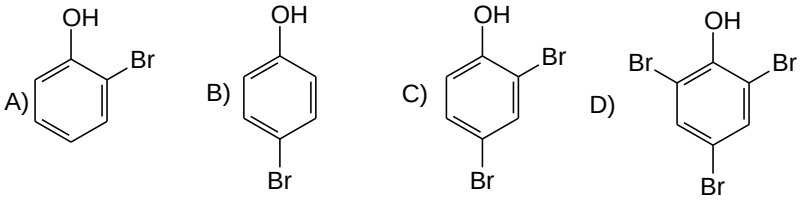
A) Elimination reaction
B) Electrophilic addition reaction
C) Nucleophilic Substitution reaction
D) Nucleophilic addition reaction

9. Choose the correct name of the following compound:

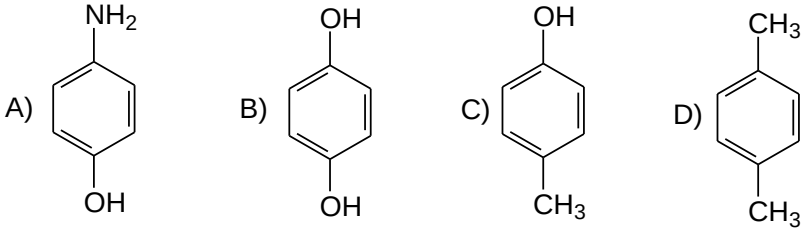


A) 3-Buten-2-ol
B) 2-Butanol
C) 1-Buten-3-ol
D) 2-Butyn-1-ol

10.The following reaction gives:  D

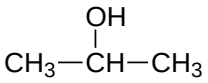


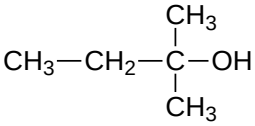
11. The structural formula of p-cresol is: C



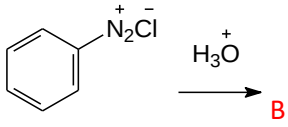
12. The most acidic alcohol is: D

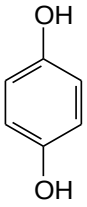
A) CH_3-CH_2-CH_2—OH

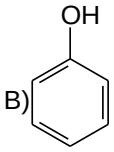
B) 

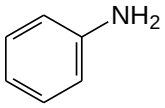
C) 

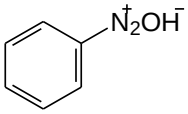
D) F_3C—CH_2-OH

13. Following reaction gives: 

A) 

B) 

C) 

D) 

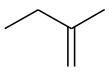
14. Which of following reagent oxidize primary alcohol to aldehyde:

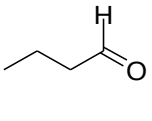
A) $NaBH_4$
B) $LiAlH_4$
C) CrO_3
D) $KMnO_4$

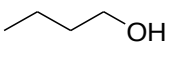
15. Ozonolysis of 2-methyl-2-butene gives:

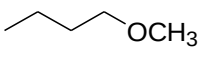
A) Acetone
B) Acetone and acetaldehyde
C) Acetaldehyde and propanal
D) Acetaldehyde

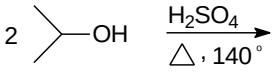
16- Which of following compounds is more reactive towards nucleophile addition? B

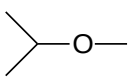
A) 

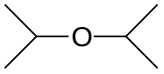
B) 

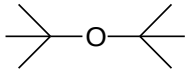
C) 

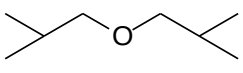
D) 

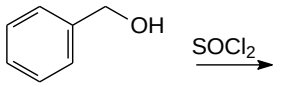
17. The product of the following reaction : 

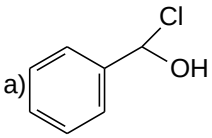
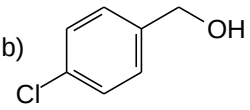
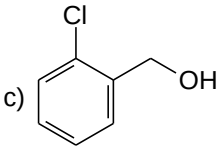
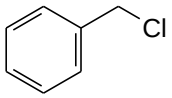
a) 

b) 

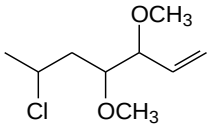
c) 

d) 

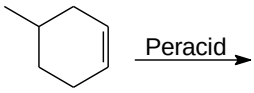
18- The product of the following reaction :  D

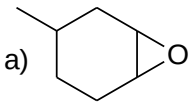
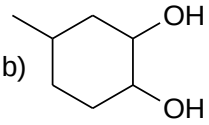
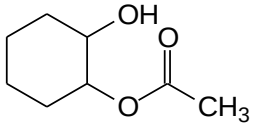
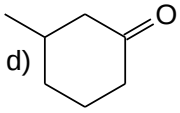
a) 
b) 
c) 
d) 

19. Choose the correct name of the following compound:

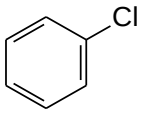
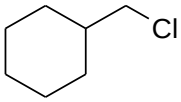
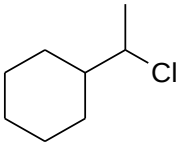


A) 2-Chloro-4,5-6-heptene
B) 6-Chloro-3,4-dimethyl-1-heptene
C) 3,4-Dimethyl-6-chloro-6-heptene
D) 6-Chloro-3,4-dimethoxy-1-heptene

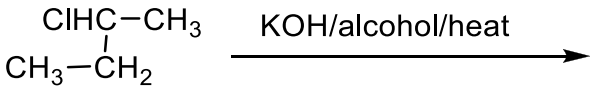
20. The product of the following reaction :  A

a) 
b) 
c) 
d) 

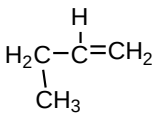
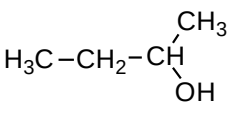
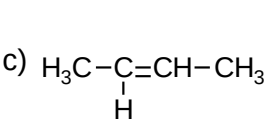
21. Which of the following compounds is known as secondary alkyl halide? C

a) 
b) 
c) 
d) CH_3CH_2Cl

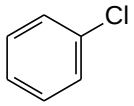
22. The major product of the following reaction is:

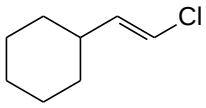


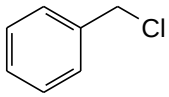
C

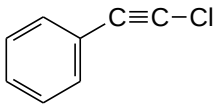
a) 
b) 
c) 
d) $CH_3-CH_2-CHK-CH_3$

23. Which of the following is called benzyl chloride? C

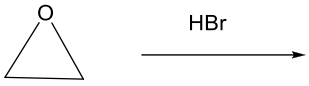
a) 

b) 

c) 

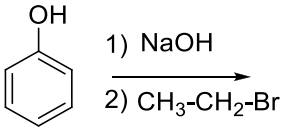
d) 

24. The following reaction gives



A) 2-bromoethanol B) Ethanol C) Ethane D) Bromoethane

25.The following reaction gives:



A) 4-Ethylphenol
B) 2-Ethylphenol
C) Ethylphenyl ether
D) Ethylphenyl ketone