

King Saud University
College of Science
Chemistry Department



Second Midterm Exam, Chem145.

Time Allowed 1.5 hour

(2-7-1435 H)

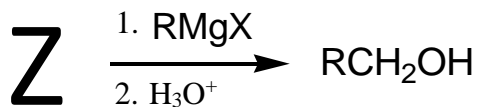
Student name:

Student number:

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

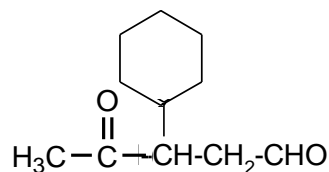
الإجابة	رقم السؤال	الإجابة	رقم السؤال
	16		1
	17		2
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	21		6
	22		7
	23		8
	24		9
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	30		15

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



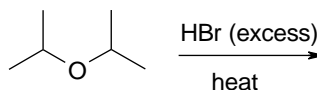
- A) Formaldehyde B) Acetaldehyde C) Acetone D) Methanol

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

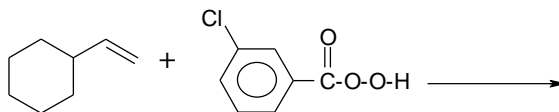


- A) $2 \text{ } CH_3CH_2CH_2Br + H_2O$ B) $CH_3CH_2CH_2OH + CH_3CH_2CH_2Br$
C) $CH_3CH_2CH_2Br + CH_3CH_2CH_2OH$ D) $2 \text{ } CH_3CH_2CH_2Br + H_2O$

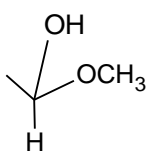
4) Oxidation of secondary alcohol yields

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

5) What is the product of the following reaction?

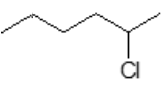
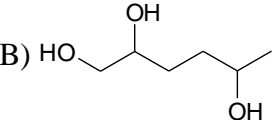
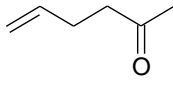
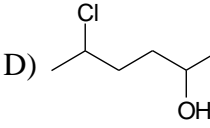


- A) B) C) D)

6) The structure  is

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

7) The resulting product from the reaction  is

- A)  B)  C)  D) 

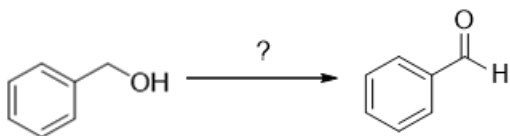
8) Which of the following statement about compounds (1) and (2) is false?

- 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?

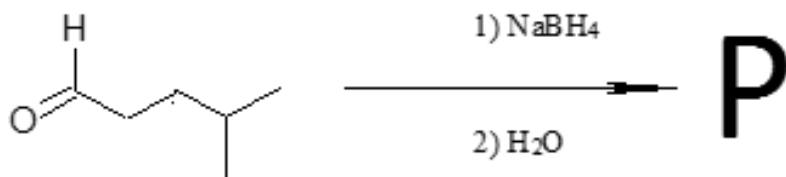


- A) PCC B) KMnO_4
 C) LiAlH_4 D) $\text{K}_2\text{Cr}_2\text{O}_7$

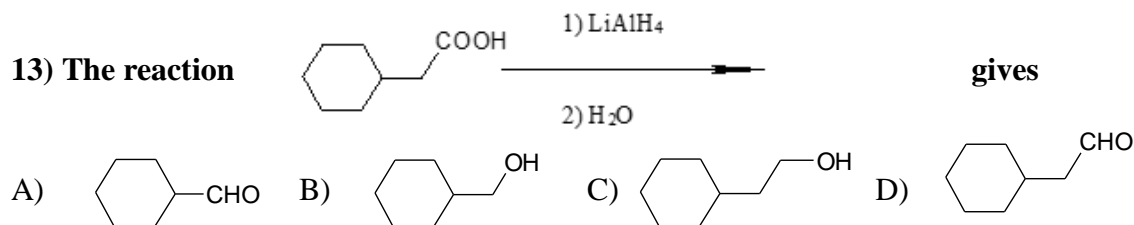
11) Ozonolysis of 2-methyl-2-butene results in the formation of

- 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



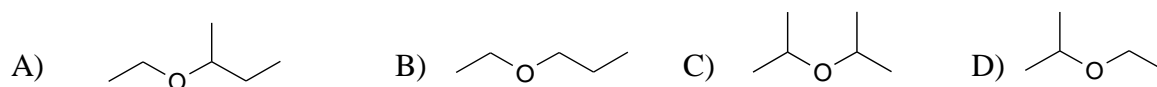
14) Which of the following statements about aldehydes is false?

- 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

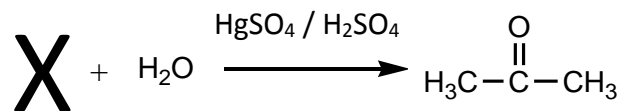
15) The most acidic compound is



16) The structure of ethyl isopropyl ether is

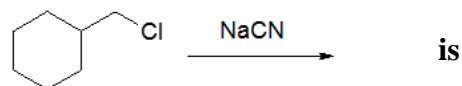


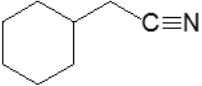
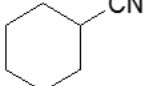
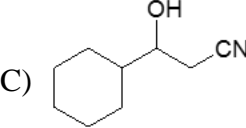
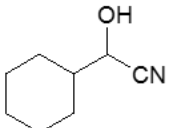
17) What is the starting material (X) used in the following reaction?



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

18) The product of the following reaction

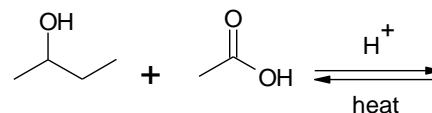


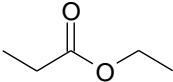
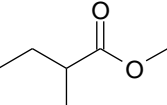
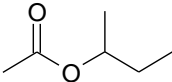
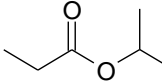
- A)  B)  C)  D) 

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?

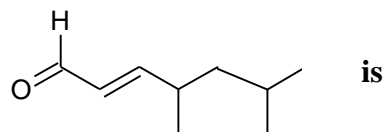


- A)  B)  C)  D) 

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

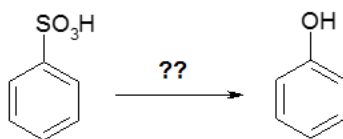
- A) Hydrazone B) Hydrazine C) Oxime D) Imine

22) The correct IUPAC name of the following structure



- 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

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



A) $\text{Na}_2\text{Cr}_2\text{O}_7/\text{heat} / \text{H}_3\text{O}^+$

B) $\text{NaOH} / \text{heat} / \text{H}_3\text{O}^+$

C) $\text{KMnO}_4 / \text{H}_3\text{O}^+$

D) $\text{Na} / \text{heat} / \text{H}_3\text{O}^+$

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

A) Isopropyl bromide

B) Cyclohexyl iodide

C) 2-Bromobutane

D) 1-Chloro-1-isopropylcyclopentane