# King Saud University (The Preparatory Year)

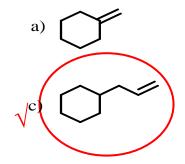
Chem.:	145	Midterm	I *	Time:	1	hour

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

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

## I) Choose the correct answer for the following:

1- Which of the following structures is allyl cyclohexane?



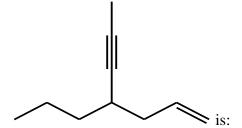
- b) (
- d) (

is:

2- The IUPAC name for this compound

- a) 3-tert-Butyl-6-ethyl-1,1,6-trimethylpentane
- b) <u>4-tert-Butyl-2,7-dimethylnonane</u>
- c) 3-Isobutyl-2,2,6-trimethyloctane
- d) 5-tert-butyl-2-ethylisononane

- **3** The IUPAC name for this compound **H**
- 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
- a) 4-Allyl -2-heptyne
- c) 4-Propyl-6-hepten-2-yne

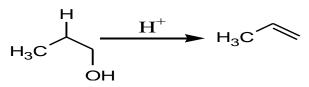
- b) 4- Propyl-1-hepten-5-yne
- d) 4-Allyl-5-heptyne
- 5- Which of the following structures is vinyl acetylene?
- a)  $HC \equiv C CH = CH_2$

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

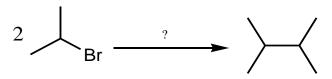
c) HC≡C-CH<sub>2</sub>- CH= CH<sub>2</sub>

d) HC≡C-C≡CH

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

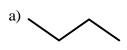


- a) Addition
- **b)** Elimination
- c) Substitution
- d) Hydrogenation
- **8** Which reaction conditions would be used to accomplish the following transformation?

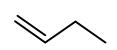


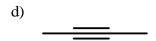
- a) Pt catalyst and H<sub>2</sub>
- b) Zn / H<sup>+</sup>
- <u>c) Na</u>
- d) LiAlH<sub>4</sub> in ether then H<sub>3</sub>O<sup>+</sup>

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









#### **10-** Heptene is immiscible with-----

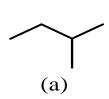
a) CHCl<sub>3</sub>

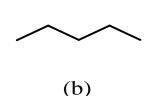
b) CCl<sub>4</sub>

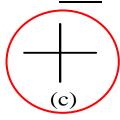
c) Benzene

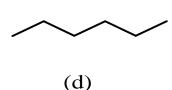
d) C<sub>2</sub>H<sub>5</sub>OH

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









#### 12- How many $\pi$ (pi) bonds present in the following compound?

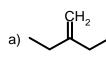
a) 7

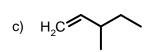
**b)** 4

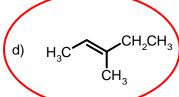
c) 2

d) 3

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







## **14-** In methane (CH<sub>4</sub>) the hydrogen atoms are oriented towards the corners of:

a) Pyramid

b) Tetrahedron

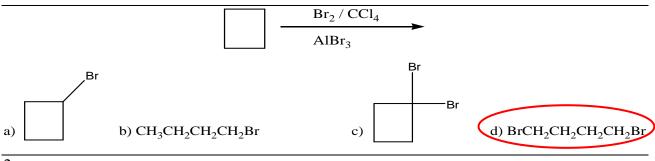
c) Rectangle

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:



2-

ОН

+ H<sub>2</sub>O

H<sub>2</sub>SO<sub>4</sub> / HgSO<sub>4</sub>

3-

c) /

4-

a) HO

OH

$$\frac{\text{KMnO}_4/\text{OH}}{\text{OH}}$$

b) O

5-

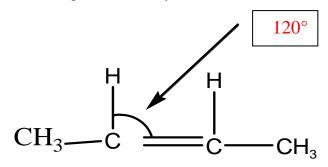
$$CH_{3}CH=CHCH_{2}CH_{2}CH_{3} \xrightarrow{\begin{array}{c} 1) O_{3} \\ \hline 2) Zn / H_{2}O \end{array}}$$

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

#### 3-Propyl-1-heptene

III) Answer the following

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



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# Dr. Seham AlTerary and Dr. Shatha AlAqeel

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