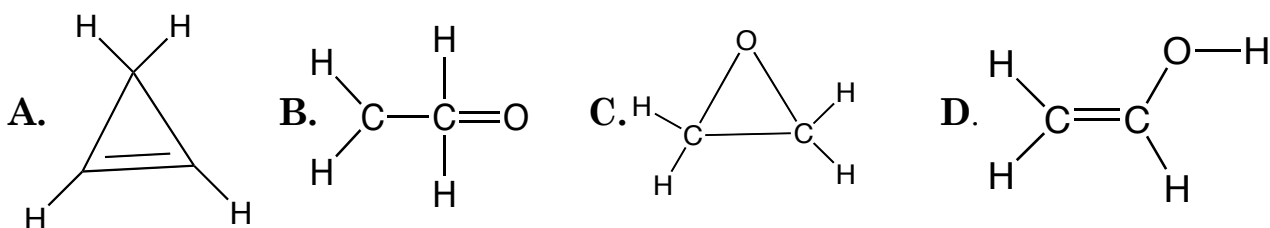


CHEMISTRY 2210 - PRACTICE MIDTERM EXAMINATION

Section I - Multiple choice. Choose the **BEST** answer from the choices which are given and write the letter of your choice on the answer sheet which is provided. All questions are equally weighted and there is no penalty for guessing. Please indicate any question for which you feel there is no correct answer or more than one correct answer with an “*”.

_____ 1. Which of the following structures IS NOT consistent with the normal rules of bonding for molecules with uncharged atoms ?



_____ 2. Which of the following has the LOWEST melting point ?

- A. CCl_4 B. NaCl C. CaCl_2 D. Cl_4

_____ 3. Which is a possible molecular formula for a compound with a double bond ?

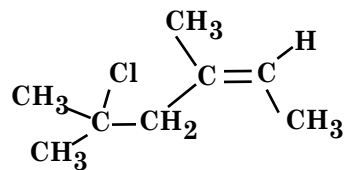
- A. $\text{C}_5\text{H}_{10}\text{Br}_2$ B. $\text{C}_5\text{H}_{10}\text{O}$ C. CH_3 D. C_2H_6

_____ 4. Which of the following has the LOWEST boiling point ?

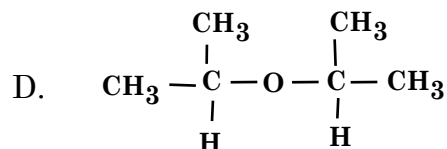
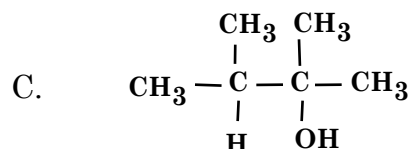
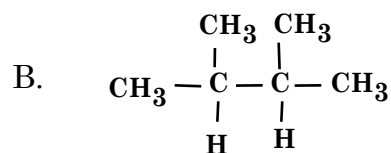
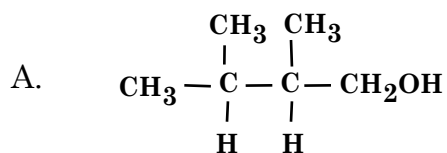
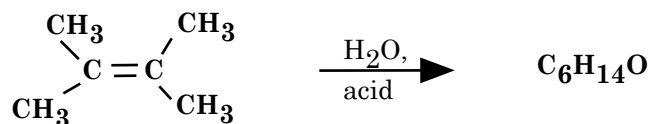
- A.** $\begin{array}{c} \text{CH}_3 \\ | \\ \text{CH}_3 - \text{C} - \text{CH}_3 \\ | \\ \text{CH}_3 \end{array}$ **B.** $\begin{array}{c} \text{CH}_3 \quad \text{CH} \quad \text{CH}_2 \quad \text{CH}_2 \quad \text{CH}_3 \\ | \\ \text{CH}_3 \end{array}$
C. $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ **D.** $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$

_____ 5. What is the correct IUPAC name for the following compound ?

- A.** cis-5-chloro-3,5-dimethyl-2-hexene
B. cis-4-chloro-2-methyl-2-hexene
C. cis-5-chloro-3,6-dimethyl-2-hexene
D. cis-4-chloro-1,2,4-trimethyl-2-pentene



_____ 6. Choose the **MAJOR ORGANIC PRODUCT** for the following reaction.



_____ 7. The reaction in question #6 would be classified as a

A. HYDRATION

B. HYDROGENATION

C. DEHYDRATION

D. DEHYDROGENATION

_____ 8. Which of the following would have the **HIGHEST BOILING POINT** ?

A. $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$

B. $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$

C. $\text{HOCH}_2\text{CH}_2\text{CH}_2\text{OH}$

D. $\text{CH}_2\text{CH}_2\text{-O-CH}_3$

_____ 9.. How many **isomeric alcohols** exist with the molecular formula $\text{C}_3\text{H}_8\text{O}$?

A. 1

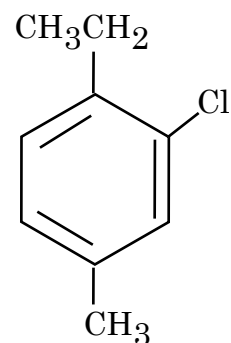
B. 2

C. 3

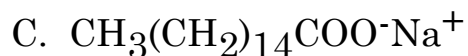
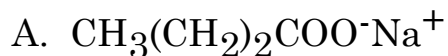
D. 4

_____ 10. What is the correct name for the following compound ?

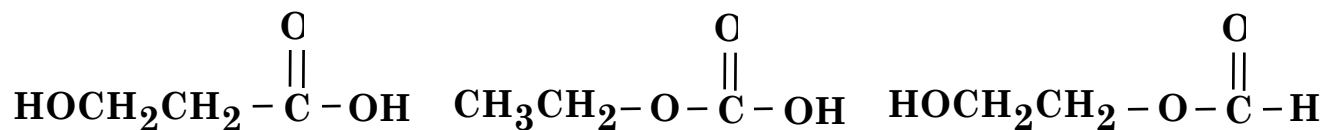
- A. 2-chloro-1-ethyl-4-methyl benzene
B. 3-chloro-4-ethyl-1-methyl benzene
C. 2-chloro-1-ethyl-4-methyl cyclohexene
D. 2-chloro-1-ethyl-4-methyl phenol



____ 11. Which compound would be classified as a **SOAP** ?



____ 12. Which compounds are **ISOMERS** ?



(I)

(II)

(III)

- A. I and II only
B. II and III only
C. I and III only
D. I, II, and III

____ 13. How many **constitutional isomers** are possible with the formula $\text{C}_4\text{H}_9\text{Br}$?

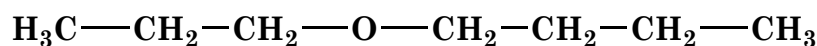
A. two (2)

B. three (3)

C. four (4)

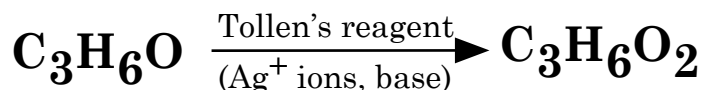
D. five (5)

____ 14. What is the correct name for this compound?



- A. 4-octanone
B. 4-octanol
C. butylpropyl ether
D. 4-octyl ether

____ 15. A three carbon compound undergoes the following transformation:



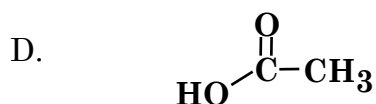
This reaction could represent:

- A. The reaction of propanol to yield propanal
B. The reaction of propanal to yield propanoic acid
C. The reaction of propyl ether to yield propanal
D. The reaction of propane to yield propanol

____ 16. Which statement is NOT TRUE ?

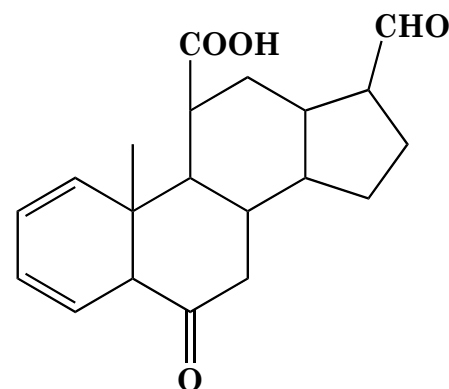
- A. Formaldehyde is used to embalm cadavers.
- B. Acetone is present in nail polish remover.
- C. Formaldehyde is added to foods as a preservative
- D. Butane lighters may contain two isomeric compounds.

____ 17. Which of the following is present in vinegar?



____ 18. This compound has the following functional groups:

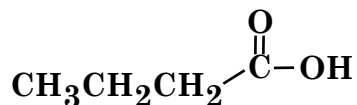
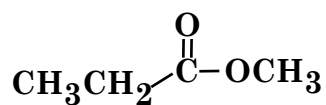
- A. ketone, alkene, carboxylic acid, aldehyde
- B. alkyne, ester, carboxylic acid, aldehyde
- C. carboxylic acid, alkene, amide, ester
- D. ester, aldehyde, carboxylic acid, alkene



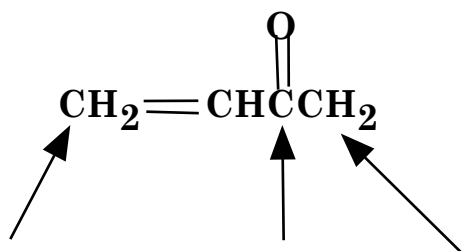
____ 19. Choose the compound which is the **STRONGEST ACID**.

- A phenol B. water C. acetic acid

____ 20. Choose the compound with the **HIGHEST BOILING POINT**.



____ 21. What are **the real bond angles**, in degrees, around the indicated atoms .



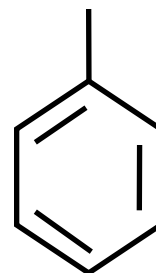
- A. 109.5 120 120
B. 109.5 109.5 120
C. 120 109.5 120
D. 120 120 109.5

____ 22. Which of the following pairs of terms **DOES NOT** represent reactions which are the reverse of each other ?

- A. OXIDATION<----->REDUCTION
B. HYDROGENATION<----->OXIDATION
C. CONDENSATION<--->HYDROLYSIS
D. HYDRATION<----->DEHYDROGENATION

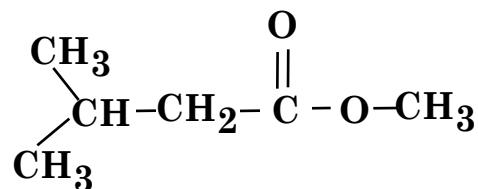
____ 23. Consider the following compound:
Choose the correct description of the compound:

- A. The compound is aromatic and unsaturated.
B. The compound is aliphatic and saturated.
C. The compound is aromatic and saturated.
D. The compound is aliphatic and unsaturated



____ 24. Choose the correct systematic name for

- A. isobutylmethyl ether
B. methyl isobutanoic ester
C. methyl-3-methylbutanoic acid
D. methyl-3-methylbutanoate



____ 25. Choose the correct systematic name for

- A. potassium isopropylformate
B. potassium n-propylpropanoate
C. potassium 2-methyl-propanoate
D. potassium isopropanoate

