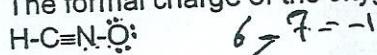


Name: *محمد العبدالله*

I. (18). Encircle the correct choice

1. The formal charge of the oxygen atom in the following compound is:



a) 0

$$6 - 7 = -1$$

c) +1

d) -2

$$6 - 7 = -1$$

2. The hybridization of N in the above compound is:

a) sp^3

b) sp^2

c) sp

d) sp^3d

3. The number of tertiary hydrogens in the following compound is:

a) 2

b) 3

c) 4

d) 5

4. The number of monochlorination products of pentane is:

a) 2

b) 3

c) 4

d) 5

5. The number of constitutional isomers of $\text{C}_3\text{H}_6\text{ClBr}$ is:

a) 2

b) 3

c) 4

d) 5

6. The alkane with the lowest boiling point is:

a)

b)

c)

d)

7. The correct IUPAC name among the following is:

a) 1,3-cyclohexadiene

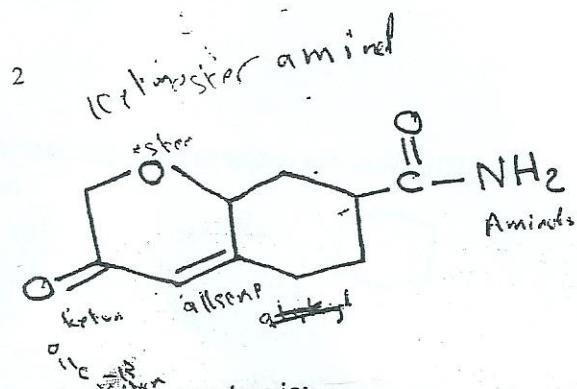
c) 2-methylcyclopentene

b) 2-ethylpentane

d) 1-chloro-2-bromobutane

8. The functional groups present in the following compound are:

- a) Ketone, alkene, amine, ester.
- b) Amide, ester, ether, alkene.
- c) Acid, ester, ketone, alkene.
- d) Amide, ketone, ether, alkene.

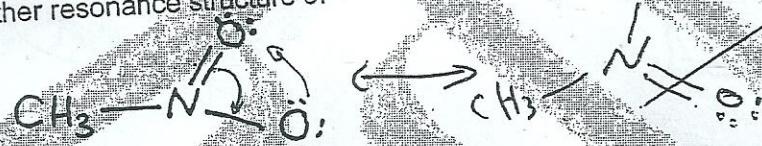


9. The compound which does not show cis-trans isomerism is:

- a) 1,4-dimethylcyclohexane
- b) $\text{CH}_3\text{CH}=\text{CHCH}_2\text{CH}_3$
- c) $\text{CH}_3\text{CH}_2\text{CH}=\text{CHCH}_2\text{CH}_3$
- d) $\text{CH}_3\text{CH}_2\text{CH}=\text{CH}_2$

II. (10). Draw the required structure in each of the following:

1. Another resonance structure of



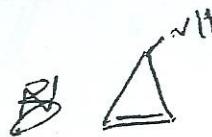
2. The most stable conformation of 1,2-dibromoethane (Newman projection).



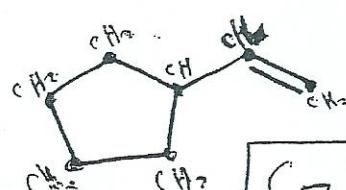
3. The most stable conformation of cis-1-ethyl-4-methylcyclohexane.



4. All structural isomers of $\text{C}_2\text{H}_7\text{N}$.

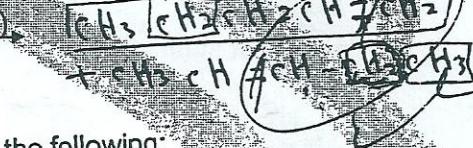
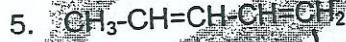
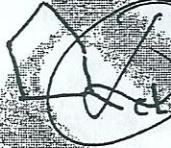
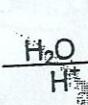
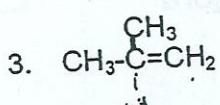
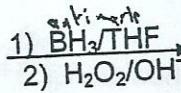
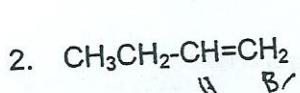
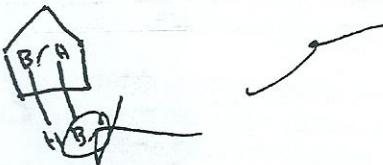


5. The molecular formula of the following compound:



$\boxed{\text{C}_7\text{H}_{12}}$

III. (10). Give the major organic product in each of the following reactions:



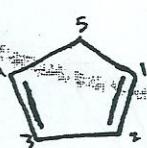
IV. (10). Give the IUPAC name of each of the following:

1.



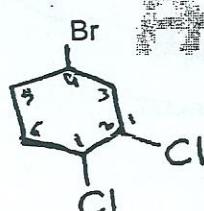
2,2-dimethylhexane

2.



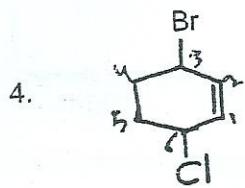
1,3-cyclopentadiene

3.

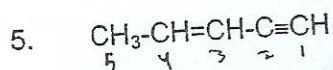


4-Bromo-1,2-dichlorocyclohexane

10

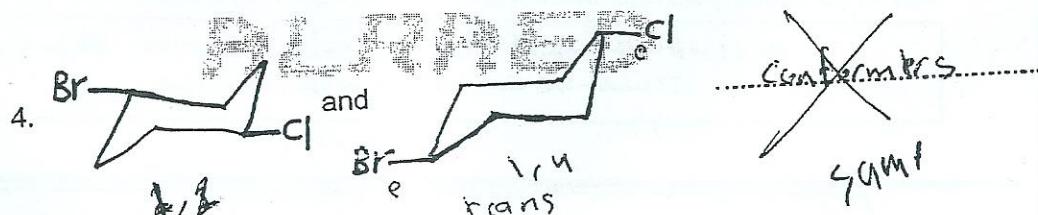
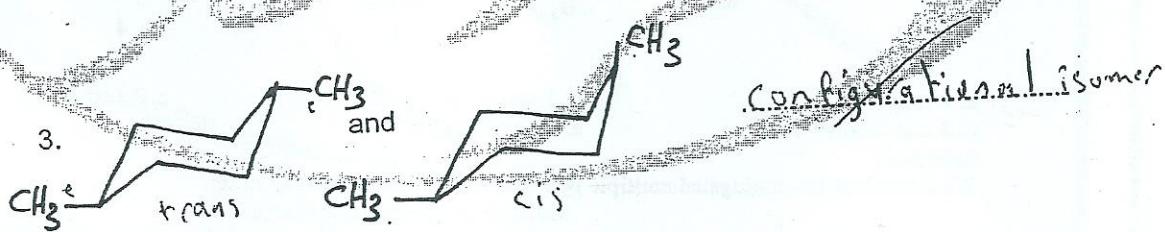
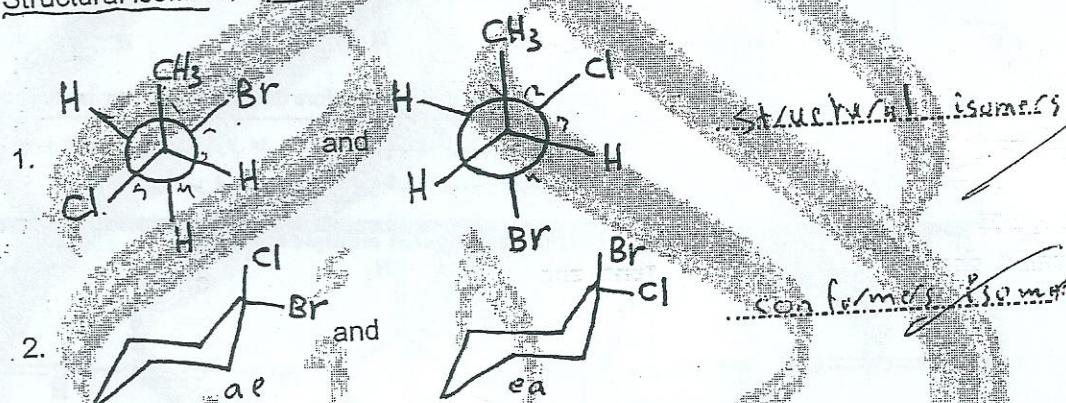


3-Bromo-6-chlorocyclohexene



3-Pentene-1-yne

V. (6). Classify each of the following pairs as Structural isomers, configurational isomers or the same/identical



$\frac{8}{2}$