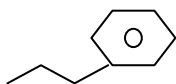
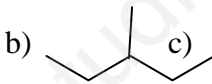

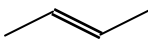



ORGANIC CHEMISTRY –BASIC PRINCIPLES &TECHNIQUES

ONE MARK QUESTIONS

- 1 Write the structural formula of the following (1 mark each)
- 2,3-Dibromo-1-phenylpentane
 - 6-Hydroxyheptanal
 - p-Nitroaniline
 - Cyclohex-2-en-1-ol
 - 4-Ethyl-1-fluoro-2-nitrobenzene
 - Pent-4-en-2-ol
 - 3,4-Dimethylphenol
 - 3-Nitrocyclohexene
 - m-Nitrophenol
- 2 Are the following IUPAC names correct? If not write the correct names. (1 mark each)
- 2,2-dimethyl pentane
 - 2,5,7-trimethyloctane
 - 4-chloro-2-methylpentane
 - but-4-ol-1-yne
 - 1-hydroxyethanoic acid
 - Propan-2-ol
 - 2-Ethylpent-2-ene
 - Hexa-1,6-diene
 - 4-ethyl-3-methylhexane
 - Pent-4-ene
- 3 Write IUPAC names for the following (1 mark each)
- 
 - 
 - 
 - 
 - 
 - $(\text{CH}_3)_3\text{C}-\text{CH}_2-\text{CHO}$
 - $\text{HO}-\text{CH}_2-\text{CH}_2-\text{COOH}$
 - $\text{CH}_3\text{COCH}_2\text{CHO}$
 - $(\text{CH}_3)_3\text{CCH}(\text{C}_2\text{H}_5)\text{CH}_3$
 - $\text{CH}_2=\text{CHCH}_2\text{CH}=\text{CH}_2$
 - $\text{HOOCCH}(\text{CH}_3)\text{CH}_2\text{CH}_2\text{CH}_3$
 - $\text{CH}_3\text{CH}_2\text{CH}_2\text{NO}_2$
 - $\text{HOCH}(\text{CH}_3)\text{CH}_2\text{CHO}$
 - $\text{H}_2\text{NCH}=\text{CH}-\text{COOH}$
 - $\text{CH}_3\text{COCO}_2\text{C}_2\text{H}_5$
 - $\text{CH}_3\text{CH}_2\text{CH}_2\text{COOC}_2\text{H}_5$
 - CH_3CHCl_2
 - $\text{HOOC}-\text{COOH}$
 - $\text{CH}_2=\text{CHCH}_2\text{C}\equiv\text{CCH}_3$
 - $\text{I}-(\text{CH}_2)_3\text{COOH}$
 - CH_3COCOOH
 - $(\text{CH}_3)_2\text{CHCH}(\text{C}_2\text{H}_5)\text{CH}_3$
 - $\text{CH}_3\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}_2\text{CH}=\text{CH}_2$
 - $\text{CH}_3\text{C}(\text{CH}_3)_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}(\text{C}_2\text{H}_5)\text{CH}_3$

TWO MARKS QUESTIONS

- 1 Distinguish between the following with example (2 marks each)
- Nucleophile and Electrophile
 - Heterolytic and Homolytic fissions
- 2 Give reason:
- Metallic sodium is used to prepare Lassaigne's extract.
 - Lassaigne's extract is boiled with dil HNO_3 before testing for halogens.

- 3 Arrange the following in the increasing order of their stabilities:
 a) $(\text{CH}_3)_3\text{CCH}_2^+$, $(\text{CH}_3)_3\text{C}^+$, $\text{CH}_3\text{CH}_2\text{CH}_2^+$, $\text{CH}_3\text{CH}^+\text{CH}_2\text{CH}_3$
 b) $(\text{CH}_3)_2\text{CH}^-$, $(\text{CH}_3)_3\text{C}^-$, CH_3CH_2^- , CH_3^-
- 4 Define isomerism. Draw the structural isomers of C_5H_{12} and C_4H_{10}
- 5 Give a pair of functional isomers of
 $\text{C}_2\text{H}_4\text{O}_2$ b) C_3H_6
- 6 Write short note on the following with the help of an example:
 a) Metamerism b) Position isomerism

THREE MARKS QUESTIONS

- 1 Write the bond line formula for
 a) Pentan-2-one
 b) 3-Formyl hexane-1,6-dioic acid
 c) 2,3-dimethyl butanal
- 2 Which is more stable and why?
 a) $\text{NO}_2\text{CH}_2\text{CH}_2\text{O}^-$ or $\text{CH}_3\text{CH}_2\text{CH}_2\text{O}^-$
 b) 3,3-dimethyl-1-butene or 3-methyl-1-pentene
 c) CH_3CH_2^+ or $(\text{CH}_3)_2\text{CH}^+$
- 3 Explain with examples
 a) Resonance effect b) Inductive effect c) Electromeric effect
- 4 What is the difference between distillation, distillation under reduced pressure and steam distillation?
- 5 Discuss the principle behind the following techniques taking an example in each case.
 Crystallization b) Chromatography c) Sublimation
- 6 Write one chemical test to detect the presence of the following elements in a given organic compound.
 a) Nitrogen b) Sulphur c) Phosphorous
- 7 Draw the resonating structures of
 a. Aniline ($\text{C}_6\text{H}_5\text{NH}_2$)
 b. Nitrobenzene ($\text{C}_6\text{H}_5\text{NO}_2$)
 c. Prop-2-enal
- 8 Explain the principle behind
 a) Carius method of estimation of halogens
 b) Kjeldahl's method of estimation of nitrogen
