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Nov-2016



कठोर - 036

CHEMISTRY PAPER - II : CH - 112
Organic and Inorganic Chemistry
(113102)

P. Pages : 4

Time : Two Hours

Max. Marks : 60

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Graph or diagram should be drawn with the black ink pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. All questions are compulsory.
5. Figures to the right indicate full marks.
6. Use of logarithmic table and non-programmable calculator is allowed.

1. a) Attempt **any six** of the following.

6

- i) Electrometric effect is due to.....
a) Electronegative element b) Double bonds
c) Triple bonds d) All of these
- ii) The shape of carbanion is.....
a) Linear b) Planar
c) Pyramidal d) None
- iii) The IUPAC name of $\text{CH}_3 - \text{O} - \text{C}_6\text{H}_5$ is.....
a) Methyl phenyl ether b) Methoxy benzene
c) Phenoxy benzene d) Methoxy phenyl ether
- iv) Propane on pyrolysis will not produce..... compound.
a) Propylene b) Butylene
c) Ethylene d) Methane
- v) Which alcohol will not undergo dehydration to produce an alkene ?
a) Methanol b) Ethanol
c) 1-Propanol d) 2-Propanol

vi) Which of the following has small atomic size ?

- | | |
|-------|-------|
| a) Na | b) Li |
| c) K | d) Rb |

vii) The pH of a neutral solution is.....

- | | |
|-------|------------------|
| a) 7 | b) 0 |
| c) 14 | d) None of these |

viii) According to Lewis concept the acid is:

- | | |
|---------------------------|------------------------|
| a) Proton acceptor | b) Proton donor |
| c) Electron pair acceptor | d) Electron pair donor |

b) Answer any six of the following.

6

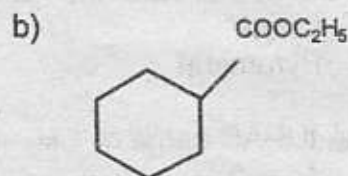
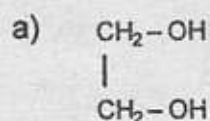
i) Define Organic Chemistry.

ii) What is Covalent bond ?

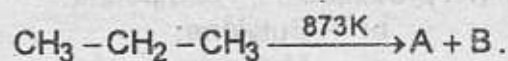
iii) Draw the structural formula for the following compounds any one.

- a) Cyclopentane
b) 3-Chloropropane

iv) Give the IUPAC names for the following compounds any one.



v) Identify A and B.



vi) Why alkali metals are monovalent ?

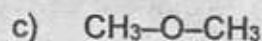
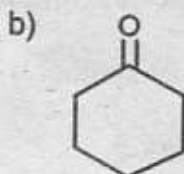
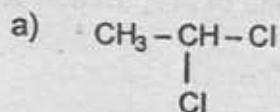
vii) Define pH.

viii) Define degree of dissociation

2. Attempt any six of the following.

12

- i) Draw the resonance structures of Benzene.
- ii) Give the IUPAC names for the following compounds any two.



- iii) State Markovnikov's rule.
- iv) Why elements of Group 2 are called alkaline earth metals.
- v) Complete the following reaction.

$$\text{H}_3\text{C} - \text{CH} = \text{CH}_2 + \text{O}_3 \xrightarrow{\text{CCl}_4} ? \xrightarrow{\text{H}_2\text{O}/\text{Zn}} ?$$
- vi) Calculate the pH value of 0.015 M HCl solution assuming the complete dissociation.
- vii) Explain the Arrhenius definition of acid & base
- viii) Why Li is differ from other alkali metals ?

3. Answer any four of the following.

12

- i) Give the electronic structure of alkali metals.
- ii) Describe ionic product of water.
- iii) Write short notes on Pyrolysis.
- iv) What is the action of following reagents on propylene.
 a) $\text{O}_3 / \text{Zn} - \text{H}_2\text{O}$ b) H_2 / Pt .
- v) Explain properties of solvents.
- vi) Write short notes on structural isomerism.

4. Answer any three of the following.

12

- i) Give any four rules for IUPAC nomenclature of alkanes.

- ii) Define the term resonance mention rules for writing resonance structures.
- iii) Explain biological role of Mg^{2+} and Ca^{2+} ions.
- iv) What are alkenes ? Write any one method of preparation of alkenes.
- v) Explain Wurtz reaction of synthesis of alkanes.

5. Answer **any two** of the following.

12

- i) What are buffer solutions ? Derive Henderson equation.
- ii) What is inductive effect ? Explain +I and -I effect with suitable examples. How does it affect the basicity of compounds.
- iii) Give the rules for IUPAC nomenclature of bi-functional organic compounds.
