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April 2014

**P. Pages : 4**

**Time : Two Hours**

**Max. Marks : 40**

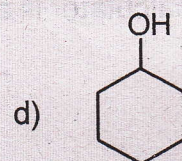
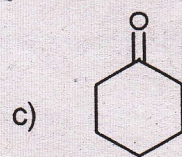
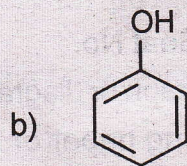
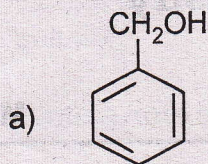
1. Do not write anything on question paper except Seat No.
2. Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. All questions are compulsory.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

8

- i) Which alcohol will not undergo dehydration to produce an alkene.
- a) Ethanol                                      b) Methanol  
c) 1-Propanol                                  d) 2-propanol
- ii) Ethyl iodide on treatment with metallic sodium in dry ether produces.
- a) Methane                                      b) Ethane  
c) Ethene                                        d) Butane
- iii) Dehydration of alcohols is example of .....
- a) Electrophilic substitution              b) Addition reaction  
c) Nucleophilic substitution              d) Elimination reaction
- iv) Hyperconjugation involves .....
- a) Delocalization of  $\sigma$  electrons into adjacent  $\pi$  system  
b) Delocalization of  $\pi$  electrons  
c) Delocalization of  $\pi$  or nonbonding electrons  
d) Delocalization of  $\pi$  or  $\sigma$  electrons.
- v) The correct IUPAC name of the compound with structural formula  $(\text{CH}_3)_3 \text{C} - \text{CH}_3$  is .....
- a) Pentane                                      b) 1, 1, 1 - Trimethyl ethane  
c) 2, 2 - Dimethyl propane              d) None of these



vi) Cyclohexanol is



vii)  $\text{KMnO}_4$  is act as .....

a) Complexing agent

b) Precipitating agent

c) Reducing agent

d) Oxidizing agent

viii) Which one of the following is an organic solvent.

a)  $\text{H}_2\text{O}$

b)  $\text{NH}_3$

c)  $\text{CCl}_4$

d)  $\text{SO}_2$

ix) Reaction between hydrogen ion and hydroxyl ion is called .....

a) Hydrogenation

b) Hydroxylation

c) Neutralization

d) Hydrolysis

x) Strength of an acid depends on its tendency to .....

a) Accept electrons

b) Donate electrons

c) Accept protons

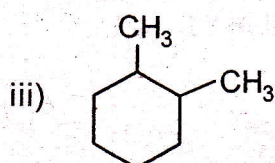
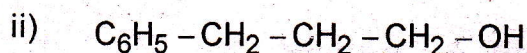
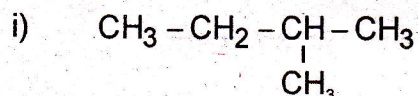
d) Donate protons



2. Attempt **any four** of the following.

8

- Distinguish between Inductive effect and Resonance effect.
- Give important applications of organic compounds.
- Give IUPAC names for the following any two compounds.



- Draw the structural formula for the following any two compounds.
  - 2 - Butanone
  - 2, 3 - Dimethyl hexane
  - Methanoic acid
- Discuss Arrhenius theory of acids and bases.
- Calculate the pH value of 0.015M HCl solution, assuming the complete dissociation.

3. Attempt **any two** of the following.

8

- Explain the formation of Ethane molecule by  $\text{SP}^3$  hybridisation.
- Write short note on Markovnikov's rule.
- What is the action of the following reagents on 2 - butene.
  - $\text{H}^+ / \text{H}_2\text{O}$
  - HCl



4. Attempt **any two** of the following. 8
- a) Derive the Henderson-Hasselbalch Equation for pH of Acidic Buffer solution.
  - b) Write a note on Ionic product of water.
  - c) What are alkenes ? Explain any two methods for formation alkenes.
5. a) Define Isomerism. Discuss different types of isomerism. 6

OR

Define solvents. Discuss properties of solvents.

- b) Give any four rules for IUPAC nomenclature of alkanes. 2

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