Seat Number

April 2014

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खगोल - 034

CHEMISTRY PAPER - II : CH - 112

Organic & Inorganic Chemistry (11136)

P. Pages : 3

Time : Two Hours **Max. Marks : 40**

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 indicates full marks.
6. Use of logarithmic table and non programmable calculator is allowed.

1. Attempt **any eight** of the following. **8**

i) Which statement is not correct about organic Chemistry?
   a) It is chemistry of carbon compounds.
   b) All organic compounds contain carbon, Hydrogen, Oxygen and Nitrogen.
   c) Carbon is essential element in organic compounds.
   d) It is study of Hydrocarbon and Its derivatives.

ii) An isomer of ethanol is.....
   a) Methanol b) Dimethyl ether.
   c) Diethyl ether d) Ethylene glycol.

iii) The IUPAC name of $CH_3 - O - C_2H_5$ is.....
   a) Ethyl methyl ether b) Methoxy ethane
   c) Ethoxy methane d) Methyl ethyl ether.

iv) The reactions of alkanes with oxygen to form CO_2, H_2O and heat is called as.....
   a) Hydrocracking b) Pyrolysis.
   c) Combusion d) Catalytic cracking.

v) Alkenes are converted to alkanes by reaction....
   a) Dehydrogenation b) Hydration
   c) Hydrogenation d) Dehydration.

vi) Saturated hydrocarbons mainly undergo.....
a) Addition reaction b) Substitution reaction
c) Elimination reaction d) Polymerisation.

vii) BF_3 molecule is.....
a) Bronsted acid b) Lewis Acid
c) Bronsted base d) Lewis Base.

viii) According to Arrhenius theory, Base is the substance which.....
a) Donate H^+ ions in Solution b) Accepts H^+ ions in solution.
c) Gives OH^- ions in solution. d) Donate pair of electrons.

ix) Which of the following is not an inorganic solvent?
a) H_2O b) NH_3
c) CCl_4 d) SO_2

x) Solvent with longest range of liquid state is.....
a) Ammonia b) HF
c) Water d) SO_2

2. Attempt **any four** of the following. 8

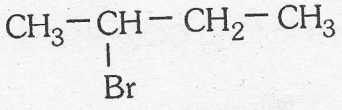
i) Explain the concept of tetravalency of carbon.

ii) Define Inductive effect with suitable example.

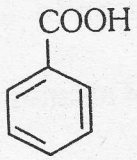
iii) Draw the structural formula for the following compounds (any two).
a) cyclohexane b) Ethanol
c) 1-chloropropane.

iv) Give the IUPAC names for the following compounds (any two).

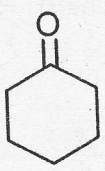
a)



b)



c)



v) Discuss Bronsted - Lowry theory of acids and bases.

vi) Calculate the pH value of 0.01M H_2SO_4 Solution, assuming the complete dissociation.

3. Attempt **any two** of the following. 8

i) Explain SP hybridization with the formation of acetylene molecule

ii) What are alkanes? Explain one method of formation of alkanes.

iii) What is the action of following reagents on propylene?
a) $O_3/Zn\text{-}H_2O$ b) H_2/Pt

4. Attempt **any two** of the following. 8

i) Derive the Henderson - Hassel Balch equation for pH of basic buffer solution.

ii) Define and explain Ionic product of water.

iii) What is dehalogenation? How will you prepare propene by this method?

5. a) Define the term resonance. State the conditions necessary for resonance and mention rules for writting resonance structures. 6

OR

Define solvents. Discuss classification of solvents with suitable examples. 6

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

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