April 2015

Seat Number

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खजिना - 005

CHEMISTRY PAPER – II : CH - 122
Organic & Inorganic Chemistry
(12136)

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

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

i) During a titration equivalence point is reached when.
   a) Volume of titrant is equal to volume of analyte
   b) Normality of analyte is equal to normality of titrant
   c) N_1V_1 of titrant is equal to N_2V_2 of analyte
   d) Indicator shows colour change

ii) The reaction

$$R-X + CN^{\ominus} \rightarrow R-CN + X^{\ominus}$$

   a) Addition reaction b) Elimination reaction
   c) Substitution reaction d) Rearrangement reaction

iii) 1M NaCl contains.
   a) 58.5 gm NaCl in 100 ml H_2O
   b) 5.85 gm of NaCl in 1000 ml H_2O
   c) 58.5 gm NaCl in 1000 ml H_2O
   d) 5.85 gm NaCl in 1L H_2O.

iv) The formula of ethyl ethanoate is,
   a) $CH_3COOC_2H_5$ b) $C_2H_5COOC_2H_5$
   c) $C_2H_5COOCH_3$ d) $C_2H_5OC_2H_5$

v) Sum of atomic weights of atoms that make a molecule is
   a) Molecular weight b) Formula weight
   c) Atomic weight d) Equivalent weight

vi) Nitration of benzene can be carried out using.
   a) Conc. HNO_3 b) Conc. H_2SO_4
   c) dil. HNO_3 d) Nitrating mixture

vii) Alkaline hydrolysis of ester is called.
   a) Neutralization b) Esterification
   c) Polymerization d) Saponification

viii) Ethyl alcohol reacts with thionyl chloride to give
   a) $CH_3-CH_2-Cl+HCl$
   b) $CH_3-CH_2-Cl+H_2O+SO_2$
   c) $CH_3-CH_2-Cl+HCl+SO_2$
   d) $CH_3-CH_2-Cl+Cl_2+SO_2$.

ix) Molarity X volumes in milliliters is known as,
   a) Moles b) Millimoles
   c) Equivalents d) Milliequivalents

x) Williamson's synthesis is used for preparation of
   a) Alkyl halides b) Alcohols
   c) Ethers d) Aldehydes

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

i) Give chemical reaction when ethyl alcohol is heated with 95% H_2SO_4.

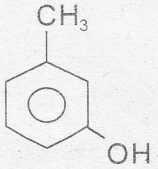
ii) Define the term standard solution.

iii) Give synthetic uses of $NaBH_4$.

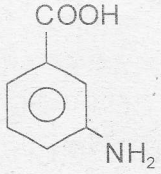
iv) Define the term molecular weight with example.

v) Name the following **any two.**

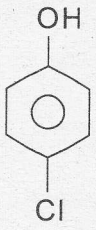
a)



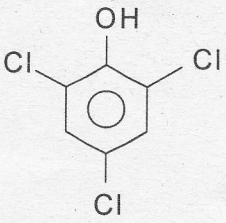
b)



c)



d)



vi) What are ethers ? Give one example of symmetrical and unsymmetrical ethers.

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

i) How many grams of $K_2Cr_2O_7$ are present in 500 ml 0.5 N solution (Given Equivalent Weight of $K_2Cr_2O_7 = 49.032$).

ii) Give any two methods of preparation of ethyl alcohol.

iii) What is nitration ? Discuss nitration of benzene.

4. a) Discuss calibration of pipette and volumetric flask.

OR

a) What are alkyl halides ? How are they classified ? Give one method for synthesis of alkyl halides. **6**

b) What is the effect of $NaHCO_3$ on CH_3COOH. **2**

5. Answer **any two** of the following. **8**

i) Identify A and B

$$CH_3-\overset{\overset{O}{\|}}{C}-Cl \xrightarrow[BaSO_4]{pd} A \xrightarrow{C_6H_5NHNH_2} B$$

ii) Give requirements of primary standard substances.

iii) Describe the method for formation of carboxylic acid from nitriles.

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