CHEMISTRY QUESTION PAPER

Time : 2 Hrs. **Max. Marks : 40**

Note :

(i) All questions carry equal marks.

(ii) Give balanced equations and draw neat diagrams wherever necessary.

(iii) Figures to the right indicate full marks.

(iv) Answer to every question must be written on a new page.

Q. 1 Select and write the most appropriate answer from the given alternatives for each sub-question. [8]

(i) The inner transition elements belong to ..... (1)

(a) d-block (b) f- block (c) s - block (d) p-block

(ii) In carbonium ion, the central carbon atom is in following hybridized state ..... (1)

(a) SP (b) SP^2 (c) SP^3 (d) dSP^2

(iii) Carbolic acid is .....

(a) Carboxylic acid (b) Picric acid

(c) Ortho-nitrophenol (d) Phenol.

(iv) Which of the following compounds does not undergo aldol condensation – (1)

(a) $H-\overset{\overset{O}{\|}}{C}-H$ (b) $CH_3-\overset{\overset{O}{\|}}{C}-H$

(c) $CH_3-\overset{\overset{O}{\|}}{C}-CH_3$ (d) $CH_3-CH_2-\overset{\overset{O}{\|}}{C}-H$

(v) Carboxylic acids on heating with P_2O_5 give ..... (1)

(a) Acid chlorides (b) Alkyl halides (c) Acid amides (d) Acid anhydrides.

(vi) Tertiary butyl amine is a ..... (1)

(a) Primary amine (b) Secondary amine

(c) Tertiary amine (d) Quaternary ammonium salt

(vii) Keratin is an example of ..... (1)

(a) Derived proteins (b) Conjugated proteins

(c) Globular proteins (d) Fibrous proteins.

(viii) Terylene is ..... (1)

(a) Polyamide fibre (b) Polyester fibre (c) Vegetable fibre (d) Protein fibre

Q. 2 (A) Attempt any one : [8]

(i) Explain the term 'homolytic fission' with suitable examples. (2)

(ii) What are antacids ? (2)

Write any 'two' sides effects of antacids.

(B) Attempt any one :

(i) How is ethyl ethanoate prepared from -

(a) Carboxylic acid (b) Acid chloride. (2)

(ii) Give chemical reactions of glucose with -

(a) Hydroxyl amine (b) Bromine water. (2)

(C) Answer the following :

(i) Write chemical reactions involved in preparation of Nylon-66. (2)

(ii) How is ethanamine prepared by using -

(a) Acetaldoxine (b) Methyl cyanide. (2)

Q. 3 (A) Attempt any one : [8]

(i) What is the action of following reagents on acetaldehyde ? (3)

(a) Na - Hg/H_2O

(b) Ammonia

(c) Sodium bisulphite.

(ii) Write IUPAC name of ethyl - methyl ether and explain action of Cold HI and Hot HI on it. (3)

(B) Answer any one :

(i) How is cumene converted into phenol ?
Give a test to distinguish between phenol and ethanol. (3)

(ii) Write a note on Wurtz reaction and mention any two uses of Iodoform.

(C) Answer the following : (2)

Distinguish between Lanthanides and Actinides.

Q. 4 (A) Answer the following : [8]

With the help of energy profile diagram explain the mechanism of alkaline hydrolysis of Bormomethane. (4)

(B) Answer any one of the following :

(i) How will you obtain propan-2-on using
(a) $CH_3 - CN$ (b) Ca — salt of fatty acid
What is the action of following reagents on propan-2-on
(a) Hydrogen Cyanide (b) Hydrazine. (4)

(ii) How are monohydric alcohols classified ? Give suitable examples.
Draw the structure of 2 - methyl- propan-1-ol. (4)

Q. 5 (A) Attempt any one : [8]

(i) Define optical activity.
Explain optical activity of 2 - chlorobutane. (4)

(ii) Write acetylation reactions of -
(a) Ethyl amine, (b) Diethyl amine (4)
Explain Hardening of Oils.

(B) Attempt any two :

(i) Why do lanthanides form coloured compounds ? (2)

(ii) Write a note on alkaline hydrolysis of an ester. (2)

(iii) Explain the terms -
(a) Analgesics, (b) Proteins. (2)