

Model Question Paper
Organic Nitrogen Compounds - Part II

12th Standard

Chemistry

Reg.No. :

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I. Answer all the questions.

II. Use blue pen only.

III. Question number 15 is compulsory.

Time : 01:30:00 Hrs

Total Marks : 65

5 x 1 = 5

Part-A

- 1) Nitration of nitrobenzene results in
(a) o-dinitro benzene (b) 1,3,5-trinitro benzene (c) p-dinitro benzene (d) m-dinitro benzene
- 2) Nitrobenzene on electrolytic reduction in con. sulphuric acid, the intermediate formed is
(a) $C_6H_5NH - NHC_6H_5$ (b) $C_6H_5 - NHOH$ (c) $C_6H_5 - N = N - C_6H_5$ (d) $C_6H_5 \cdot HSO_4$
- 3) Electrophile used in the nitration of benzene is
(a) hydronium ion (b) sulphonic acid (c) nitronium ion (d) bromide ion
- 4) The reduction of $CH_3 - CH_2 - C \equiv N$ with sodium and alcohol results in the formation of
(a) $CH_3 - CH - CH_3$ (b) $CH_3 - CH_2 - CH_2 - OH + N_2$ (c) $CH_3 - CH_2 - CH_2 - NH_2$ (d) $CH_3 - CH_2 - NH_2$
 $\quad \quad \quad |$
 $\quad \quad \quad NH_2$
- 5) The basic character of amines is due to the
(a) tetrahedral structure (b) presence of nitrogen atom (c) lone pair of electrons on nitrogen atom (d) high electronegativity of nitrogen

Part-B

- 6) Explain the electrolytic reduction of nitrobenzene.
- 7) What are amines? How are they classified?
- 8) Give the structural formula of (i) 2-amino-2-methyl propane (ii) 2-(N, N-dimethyl) amino butane
- 9) What happens when acetonitrile is hydrolysed?
- 10) Write the name and structure of four isomeric amines having the molecular formula C_3H_9N .

Part-C

- 11) An organic compound (A) of molecular formula C_2H_5NO reacts with $Br_2/NaOH$ to give compound (B) of molecular formula CH_5N (A) is reduced by $LiAlH_4$ to give compound (C) of formula C_2H_7N . Identify (A), (B) and (C).
- 12) An aromatic primary amine A with molecular formula C_6H_7N undergoes diazotisation to give B. When treated with hypophosphorous acid gives C. Identify A, B and C.
- 13) $C_2H_3N \xrightarrow{LiAlH_4} B \xrightarrow{HNO_2} C$ Identify A, B and C
 $\quad \quad \quad \text{Ether}$
- 14) Explain the isomerism in nitroalkanes.
- 15) a) Write a note on the reduction of nitrobenzene under different conditions.

(OR)

- b) What are the differences between aliphatic nitro compounds and aromatic nitro compounds?

Part-D

- 16) a) Distinguish primary, secondary and tertiary amines
b) How do primary, secondary and tertiary amines react with nitrous acid?
- 17) a) Give comment on the basic nature of aniline.
b) Write notes on (i) carbylamine reaction, (ii) mustard oil reaction, (iii) acetylation of benzylamine, (iv) formation of Schiff's base, (v) Diazotisation reaction.
