

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, OCTOBER 2014**Fifth Semester****Core Course—BASIC ORGANIC CHEMISTRY—II**

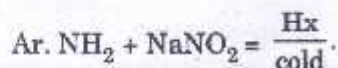
(Common for B.Sc. Chemistry Model I and Model II, B.Sc. Petrochemicals and B.Sc. Chemistry Environment and Water Management)

Time : Three Hours

Maximum Weight : 25

*Write equations wherever necessary.***Section A***Answer all questions.**Each bunch of four questions carries a weight of 1.*

- I. 1 Draw the structure of chain isomers of 1-amino butane.
2 Hinsberg reagent is.
3 Give the major product of the reaction :



- 4 Draw the structure of p-toluene diazonium bromide.
- II. 5 Monomer unit in Nylon 6 is :
6 Give an example for polyester.
7 What is soap ?
8 Chloroalkylamines drugs mainly used in the therapy of _____.
- III. 9 Tollen's reagent is _____.
10 Borche's reagent is _____.
11 NBS is _____.
12 Zeigler-Natta catalyst is _____.
- IV. 13 Alcohols show broad intense band at _____ cm^{-1}
14 Benzaldehyde gives IR bond at 1698 cm^{-1} corresponds to _____.
15 Change of λ_{max} in longer wavelength is called _____.
16 The number of H-NMR (proton-NMR) signals is acetaldehyde is _____.

(4 × 1 = 4)

Turn over

Section B

Answer any **five** questions.

Each question carries a weight of 1.

- 17 Give one method of preparation of phenylhydrazine with equation.
- 18 How is amines obtained from amide? Give equation.
- 19 Which is more basic and why, NH_2 and $\text{CH}_3\text{—NH}_2$?
- 20 Give one method of preparation of malachite green.
- 21 Which is least stable and why – cyclopropane and cyclohexane?
- 22 Give one example and function of following drugs (a) Antibacterial; (b) Antipyretics.
- 23 Give one application of lead tetraacetate and benedicts solution.
- 24 What is chromophore? Give two examples.

(5 × 1 = 5)

Section C

Answer any **four** questions.

Each question carries a weight of 2.

- 25 What is Sandmeyer's reaction? Give example. Write its mechanism.
- 26 Write a method of preparation, structure and two synthetic uses of diazoacetic ester.
- 27 Briefly explain Norrish type reactions.
- 28 Give the synthesis and two applications of (a) Urea formaldehyde resin and (b) Epoxy resin.
- 29 Draw the structure of the following:
 - (a) Sulphanilamide.
 - (b) Ampicillin.
 - (c) Chloroquine.
 - (d) Paracetamol.
- 30 Write briefly on LAS and ABS-detergents.

(4 × 2 = 8)

Section D

Answer any **two** questions.

Each question carries a weight of 4.

- 31 Briefly explain with equation for the reduction of nitrobenzene at different conditions.
- 32 (a) An organic compound A having molecular formula of $\text{C}_7\text{H}_8\text{O}$ on oxidation gives an aldehyde B, and it gives following NMR data a singlet (broad) at $\delta = 3.7$ (1H), a singlet at $\delta = 4.45$ (2H) and a singlet at $\delta = 7.27$ (5H). Assign and draw the structure of A. Draw the NMR spectrum of product B.
 - (b) Brief notes on mass spectroscopy and EI ionisation.
- 33 (a) Discuss with example on structural features affecting basicity of aromatic amines.
 - (b) Classify dyes on the basis of structure and method of application.

(2 × 4 = 8)