E 8539 (Pages : 2) Reg. No.....

Name.....

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 :

$$Ar.NH_2 + NaNO_2 = \frac{Hx}{cold}.$$

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 Borrche'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 ———.

$(4 \times 1 = 4)$

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_3 and $CH_3—NH_2$?

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.

$(5 \times 1 = 5)$

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) Amplicillin.

(c) Chloroquine. (d) Paracetamol.

30 Write briefly on LAS and ABS-detergents.

$(4 \times 2 = 8)$

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 C_7H_8O 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.

$(2 \times 4 = 8)$