

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, OCTOBER 2013**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 position isomers of 1-aminobutane.
2 Reagents used in Gattermann reaction is _____.
3 Complete the reaction $\text{Ar-N}_2\text{X} + \text{H}_2\text{O} \xrightarrow{\text{H}^+}$.
4 Draw the structure of phenyl hydrazine.
- II. 5 Monomer unit in PVC is _____.
6 Give an example of polyamide.
7 What is synthetic detergent ?
8 Chloramphenicol belongs to _____ class of drugs.
- III. 9 Schiff's reagent is _____.
10 Barford's reagent is _____.
11 DCC is _____.
12 Give *one* example of Vat dye.
- IV. 13 The carbonyl stretching frequency in acetone is _____ cm^{-1} .
14 The approximate IR stretching frequency of NH_2 is _____.
15 Change of *and mora* to shorter wavelength is called _____.
16 The number of proton NMR (H-NMR) signals of acetone is _____.

 $(4 \times 1 = 4)$ **Turn over**

Section B

Answer any **five** questions.
Each question carries a weight of 1.

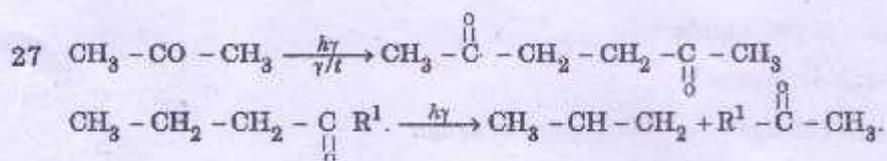
- 17 Give *one* method of preparation with equation of diazomethane.
- 18 How is amine obtained from alcohol? Give equation.
- 19 Which is more basic and why NH_3 and $\text{C}_6\text{H}_5\text{NH}_2$.
- 20 Give *one* method of preparation of phenolphthalein.
- 21 Which is more stable and why - 1, 3 - butadiene and 1, 4 - pentadiene.
- 22 Give *one* example and function of following drugs - antiviral and analgesics.
- 23 Give *one* application of OSO_4 and SeO_2 .
- 24 What is auxochrome? Give *two* examples.

(5 × 1 = 5)

Section C

Answer any **four** questions.
Each carries a weight of 2.

- 25 What is Gomberg reaction? Give an example. Write its mechanism.
- 26 Give *four* comparative studies of aliphatic / aromatic amines.



Write the path of formation of these products and explain.

- 28 Give the synthesis and two application of Polyurethane and Teflon.
- 29 Write briefly on LAS and ABS detergents.
- 30 Draw the structure of following :-

- | | |
|------------------|----------------------|
| (a) Ampicillin. | (b) Chloramphenicol. |
| (c) Paracetamol. | (d) Analgin. |

(4 × 2 = 8)

Section D

Answer any two questions.

Each question carries a weight of 4.

- 31 Explain Hinsberg method for separation of 1^o, 2^o and 3^o amines.
- 32 (a) Explain quarternary amine salt as phase transfer catalyst.
(b) Classify dyes on the basis of structure and method of application.
- 33 (a) Draw and assign the structure of :
- (i) M.F. - C₈H₉Br having NMR data.
 - (a) Triplet ($\tau = 7.3, \delta = 2.7$) (2H).
 - (b) Triplet ($\tau = 6.6, \delta = 3.4$), (2H).
 - (c) Singlet ($\tau = 2.78, \delta = 7.22$). (5H).
 - (ii) M.F. = C₇H₈, having NMR data.
 - (a) Singlet ($\tau = 7.68, \delta = 2.32$) (3H).
 - (b) Singlet ($\tau = 2.8, \delta = 7.2$) (5H).
- (b) Brief notes on Mass spectrometry and ϵ I ionisation.

(2 × 4 = 8)