E 5023

00005023

Reg. No.....

Name.....

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, OCTOBER 2023

Fourth Semester

Core Course—BASIC ORGANIC CHEMISTRY—I

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

[Prior to 2013 Admissions]

Time : Three Hours | Maximum Weight : 25

Write equations wherever necessary.

Section A

Answer **all** *questions*

Each bunch of **four** *question carries a weight of* 1.

Fill in the blanks :

I. 1 Lucas reagent is ————————.

2 Which is more acidic methanol or 2-propanol ?

3 Give one use of resorcinol.

4 Give the structure of Benzoin.

II. 5 What is the product obtained when acetophenone is treated with HCN ?

6 What is Urotropine ?

7 Draw the structure of Coumarin.

8 Give one use of Semicarbazide.

III. 9 Give the structure of Phthalic Anhydride.

10 Give an example of an Organo Metallic Compound containing Li.

11 What is an Aldol ?

12 Give the structure of Dicthyl Malonate.

Turn over

IV. 13 Give the reducing agent used in Clemmensen Reduction.

14 Give the structure of resorcinol.

15 How many alpha hydrogens are present in Trichloro Acetaldehyde ?

16 Give an example for Nucleophile.

$(4 \times 1 = 4)$

Section B

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

17. Phenol is a weaker acid than acetic acid. Explain.
18. Discuss Biuret test.
19. Give one method for the preparation of Propanol.
20. Discuss the use of acetal as protecting group using one example.
21. Give *one* method for the preparation of Picric Acid.
22. Comment on the basicity of Guanidine.
23. Give *one* reaction to distinguish 1° and 2° alcohols.
24. Give *two* uses of Benzene Sulphonyl Chloride.

$(5 \times 1 = 5)$

Section C

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

25. How will you convert acetic acid to propanoic acid and propanoic acid to acetic acid.
26. Explain the following :
    1 Cannizaro's reaction.
    2 Meerwein Ponndorf Verley reaction.
27. Give the synthesis Coumarin.
28. Give *two* methods for the preparation of Semicarbazide.

29. Give the mechanism of Aldol Condensation.

30. Explain Fries rearrangement.

(4 × 2 = 8)

Section D

Answer any **two** *questions.*
Each question carries a weight of 4.

31. (a) Give *two* tests to distinguish Benzaldehyde and Acetaldehyde.

    (b) Convert :

        (i) Ethanol to 1-propanol.

        (ii) 1-Butanol to 1-propanol.

32. Give *two* preparation of :

        (i) Nitrophenol.

        (ii) Cinnamic Acid.

        (iii) Oxalic Acid.

        (iv) Urea.

33. Give *two* preparations of each functional derivatives of Carboxylic Acid.

(2 × 4 = 8)