

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, MARCH 2017**Fourth Semester****Core Course—BASIC ORGANIC CHEMISTRY—I**

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

[2013 Admission onwards]

Time : Three Hours

Maximum : 60 Marks

Part A

Answer **all** questions.

Each question carries 1 mark.

1. Give one example for Perkins reaction.
2. How is Benzoin obtained from Benzaldehyde ?
3. How is maleic acid prepared ?
4. What is Aldol condensation ?
5. How will you convert Benzene into Benzene sulphonic acid ?
6. Give one specific use of NaBH_4 .
7. What is Wittig's reaction ?
8. Write one method for the preparation of Resorcinol.

(8 × 1 = 8)

Part B

Answer any **six** questions.

Each question carries 2 marks.

9. Give one method for the preparation of oxalic acid. Write also the equations involved.
10. When will a methylene group become active ? Give an example.
11. Give the structure of urea ? What is Biuret test ?
12. How will you convert β -Naphthol in β -Naphthylamine ?
13. What is Reformatsky reaction ? Explain.
14. Give one method for the manufacture of semicarbazide.
15. Write one synthetic application of Alkyl Lithium.
16. Discuss the Keto-enol tautomerism of Ethyl aceto acetate.

Turn over

17. Illustrate how a secondary alcohol could be prepared from Grignard reagent.
18. Guanidine is basic, explain giving reasons.

(6 × 2 = 12)

Part C

*Answer any four questions.
Each question carries 4 marks.*

19. Carboxylic acids are acidic. Explain. Discuss the effect of substituents on the acid strength of Aromatic carboxylic acids.
20. Discuss Cannizzaro's reaction with mechanism involved.
21. How is Ethylene oxide prepared? Give any three important chemical reactions of Ethylene oxide.
22. Write any three synthetic applications of Cyanoacetic ester.
23. Explain Tautomerism. Classify them with examples for each type.
24. How does effect of substituents influence the acidity of phenol? Phenol and catechol – which is more acidic explain. Compare the acidity of phenol with alcohol.

(4 × 4 = 16)

Part D

*Answer any two questions.
Each question carries 12 marks.*

25. Discuss the mechanism of the following :—
 - (i) Fries rearrangement.
 - (ii) Wederer-Mannase reaction.
 - (iii) Wolf Kishner reduction.
 - (iv) Pinacol-Pinacolone rearrangement.
26. How are the following prepared?
 - (i) Anthranilic acid.
 - (ii) Benzene sulphonyl chloride.
 - (iii) Citric acid.
 - (iv) Coumarin.
 - (v) Picric acid.
27. (a) How does urea react with diethyl malonate? State the common uses of the derivatives of the product formed.
 (b) What is Zeisel's method? Explain.
 (c) How does Hydrogen Bonding effect the properties of monohydric alcohols? Explain.
 (d) How will you convert methanol into Ethanal and Viceversa?
28. Discuss the following with examples for each type :
 - (i) Hell-Volhard Zelinsky reaction.
 - (ii) Meerwein-Pondorof Verley reduction.
 - (iii) Knoevenagel condensation.
 - (iv) Clemmensen reduction.

(2 × 12 = 24)