TB245608Q

Reg. No :.....

Name :.....

BACHELOR'S DEGREE (C.B.C.S) EXAMINATION, NOVEMBER 2024

2022 ADMISSIONS REGULAR

SEMESTER V - CORE COURSE (CHEMISTRY)

CH5B06B18 - Organic Chemistry - III

Time : 3 Hours **Maximum Marks : 60**

Part A

I. Answer any Ten questions. Each question carries 1 mark **(10x1=10)**

1. Identify the product of the reaction $CH_3CONH_2 + Br_2 + 4NaOH$
2. Sketch the ionic structure of Benzene diazonium Chloride.
3. Explain ring expansion reaction of Pyrrole.
4. State the hybridization of Nitrogen in tertiary amine.
5. Report the hydrolysis product of CN group.
6. Give reason for the blue shift in absorption maximum of Aniline observed on protonation.
7. Predict the number of peaks you will observe in the ^1H NMR spectrum of Acetone.
8. Distinguish between chromophore and auxochrome.
9. Describe briefly about addition polymerisation.
10. Sketch the structure of methyl orange.
11. Give one method of preparation of SBR.
12. Illustrate the chemical name and structure of Alizarin.

Part B

II. Answer any Six questions. Each question carries 5 marks **(6x5=30)**

13. Prove that Quinoline is formed by fusing two rings.
14. Explain the role of quaternary amine salts as phase transfer catalysts.
15. Explain the structure of Benzene diazonium chloride.
16. Discuss the preparation of Diethyl malonate? From it give the preparation of (a) dimethyl acetic acid (b) Aceto aceticacid (c) Adipic acid.
17. Compare the properties of Aniline and Ethylamine.
18. Explain the aromaticity of Indole and describe its synthesis by Fischer's Indole method.

19. Discuss about causes, prevention and treatment for drug addiction.
20. Discuss about Witt's chromophore - auxochrome theory.
21. Describe briefly about conducting polymers.

Part C

III. Answer any Two questions. Each question carries 10 marks **(2x10=20)**

22. Discuss the synthesis, aromaticity and reactions Pyrrole.
23. (a) Compare the basicity of Pyrrole, Pyridine and Piperidine (b) Discuss the nucleophilic substitution reactions of Pyridine.
24. A compound with molecular formula C_3H_6O has an IR absorption at 1715 cm^{-1} and a single ^{1}HNMR absorption at δ 2.1 ppm. The m/z peak comes at 58. Predict the structure of the compound. Justify your answer.
25. Explain classification of dyes based on their application with suitable examples.