

**B. Sc. DEGREE (C.B.C.S.) EXAMINATION, NOVEMBER 2022**  
**2020 ADMISSIONS REGULAR AND 2019, 2018 ADMISSIONS SUPPLEMENTARY**  
**SEMESTER V - CORE COURSE (CHEMISTRY)**  
**CH5B06B18 - ORGANIC CHEMISTRY - III**

Time : 3 Hours

Maximum Marks : 60

**Part A**

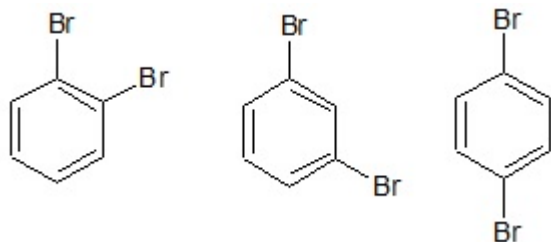
**I. Answer any Ten questions. Each question carries 1 mark****(10x1=10)**

1. Sketch the product formed when Benzene diazonium chloride is coupled with Phenol.
2. Identify the product of the reaction  $\text{CH}_3\text{CONH}_2 + \text{Br}_2 + 4\text{NaOH}$
3. Identify the product formed when Pyrrole undergoes oxidation with Chromium Trioxide in acetic acid.
4. State the hybridization of Nitrogen in tertiary amine.
5. Sketch the structure of Barbituric acid.
6. Describe bathochromic effect.
7. The C=O stretch in  $\text{CH}_3\text{CHO}$  comes at  $1725\text{ cm}^{-1}$  while in  $\text{C}_6\text{H}_5\text{CHO}$ , the C=O stretch comes at  $1700\text{ cm}^{-1}$ . Explain.
8. Recall the frequency at which the C=O stretching band of simple saturated aldehydes occur.
9. Define antimalarials with one example.
10. Illustrate the structure of Aspirin.
11. Sketch the structure of methyl orange.
12. Discuss briefly about anticancer drugs with any one example.

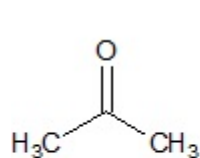
**Part B**

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

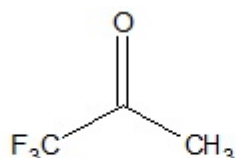
13. Comment on the structural features that affect the basicity of amines.
14. Discuss (a) Mannich reaction (b) Gatterman reaction.
15. Compare the basicity of Aniline, Methyl amine and Benzyl amine.
16. Explain with example alkylation of carbonyl compounds using enamines.
17. Distinguish between the three dibromobenzenes using their NMR spectra.



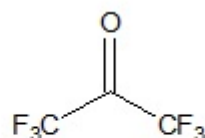
18. Explain the trend of carbonyl stretching frequencies in the following compounds:



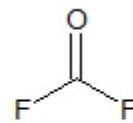
1720  $\text{cm}^{-1}$



1769  $\text{cm}^{-1}$



1801  $\text{cm}^{-1}$



1928  $\text{cm}^{-1}$

19. Discuss about any two analgesic with its structure, preparation and mode of action.

20. Explain the following with suitable examples (a) sedatives (b) antidepressants.

21. Describe briefly about conducting polymers.

### Part C

III. Answer any Two questions. Each question carries 10 marks

(2x10=20)

22. Convert Benzene to (a) m-Nitroaniline (b) Benzoic acid (c) Chlorobenzene (d) O-Nitro benzoic acid

23. Discuss the synthesis, reactions and aromaticity of Indole.

24. Sketch and explain the proton NMR spectra of a) 1-nitropropane b) Butanone

25. Explain the following (a) structure, therapeutic uses and mode of action of sulpha drugs (b) classification of antibiotics according to chemical structure.