Reg. No…….. Name…… **24U248**

B.Sc. DEGREE END SEMESTER EXAMINATION – MARCH 2024

SEMESTER **2 - CHEMISTRY FOR BSc PHYSICS/BOTANY/ZOOLOGY**

COURSE: COURSE: **19U2CPCHE2, BASIC ORGANIC CHEMISTRY**

(*For Regular - 2023 Admission and Improvement / Supplementary - 2022/2021/2020/2019 Admissions)*

Time: Three Hours Max. Marks: 60

PART A

Answer all questions. Each question carries 1 mark.

1. What is optical activity?
2. Chloroacetic acid is more acidic than acetic acid. Give reason.
3. *Meso*-tartaric acid is optically inactive due to …….
4. How is recrystallization done?
5. What are nucleophiles? Give an example.
6. The monomer in natural rubber is…….
7. What are copolymers?
8. How are free radicals formed? (1 x 8 = 8)

PART B

Answer any six questions. Each question carries 2 marks.

9. Differentiate between elastomers and fibres.
10. By taking Maleic acid and fumaric acid as examples, explain geometrical isomerism.
11. Distinguish between configuration and conformation.
12. Define enantiomers and diasteriomers giving examples.
13. Aniline is less basic than ammonia. Give reasons.
14. Represent the E and Z isomers of 1-bromo-1-chloroprop-1-ene.
15. How is Nylon 66 prepared?
16. Compare the acidities of acetic acid and trimethyl acetic acid. (2 x 6 = 12)

PART C

Answer any* four *questions. Each question carries* 5 *marks.

17. Explain Markwonikoff's addition and anti- Markwonikoff's addition by taking propene as example.
18. Explain the principle behind fractional distillation.
19. Explain hyperconjugation by comparing the stabilities if 1-butene and 2-butene.
20. What are phenol-formaldehyde resins?
21. Explain the mechanism of addition of Br_2 to alkene.
22. What is a racemic mixture? Give two methods for the resolution of racemic mixtures.

(5 × 4 = 20)

PART D

Answer any two questions. Each question carries 10 marks.

23. Briefly explain S_N1 and S_N2 mechanisms with suitable example.
24. Discuss a) Conformational analysis of cyclohexane. b) Mechanism of halogenation of benzene.
25. Draw the various conformers of n-butane. Explain its energy profile diagram and
26. comment on the stability of each conformer

    (a) Write briefly on biodegradable polymers.

    (b) Write a short note on environmental hazards caused by polymers.

(10 × 2 = 20)