

**B. Sc. DEGREE END SEMESTER EXAMINATION – JULY 2021****SEMESTER – 2 : CHEMISTRY (COMPLEMENTARY FOR PHYSICS / BOTANY / ZOOLOGY)****COURSE CODE: 19U2CPCHE2: BASIC ORGANIC CHEMISTRY***(Common for Regular 2020 Admission & Improvement/Supplementary 2019 Admission)*

Time: Three Hours

Maximum Marks: 60

**PART A*****Answer all questions. Each question carries 1 mark.***

1. What are conformers?
2. Racemic mixture is optical inactive due to.....
3. Homolytic fission results in the formation of ..... species.
4. State Saytzeff's rule.
5. What are electrophiles? Give one example.
6. The repeating unit in Nylon 6 is.....
7. Mention any two drying agents.
8. Give any two substances which can exhibit sublimation. (1 × 8 = 8)

**PART B*****Answer any six questions. Each question carries 2 marks.***

9. Sketch the conformers of cyclohexane and arrange them on the basis of stability.
10. Why is recrystallisation done?
11. Which is more acidic; acetic acid or phenol? Why?
12. (a) What are stereoisomers? (b) Define chirality
13. Give two examples each for electrophiles and nucleophiles.
14. Represent the E and Z isomers of 3-methylpent-2-ene
15. What are fibres? Give two examples.
16. What is vulcanization of rubber? What is its advantage? (2 × 6 = 12)

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

17. What is the principle behind fractional distillation and solvent extraction?
18. Explain the hybridization and stability of carbocations.
19. Distinguish between Markwonikoff's and anti- Markwonikoff's addition with example.
20. Discuss the optical isomerism in lactic acid.
21. What is a nitrating mixture? Explain the mechanism of nitration of benzene.
22. How is Bakelite synthesized? What are its uses? (5 × 4 = 20)

**PART D**

***Answer any two questions. Each question carries 10 marks.***

23. Discuss (a) Inductive effect (b) Electromeric effect (c) Mesomeric effect and (d) Hyper conjugative effect with suitable examples.
24. Draw the conformational analysis of (a) ethane and (b) n-butane with energy diagram. Comment on the stability of each conformer.
25. Compare  $S_N1$  and  $S_N2$  mechanisms and the stereochemistry involved with suitable examples.
26. (a) Write the method of synthesis and applications of SBR, PVC and Polyethene  
(b) Write a short note on health problems associated with burning of plastics.

(10 × 2 = 20)

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