

B.Sc. DEGREE END SEMESTER EXAMINATION – MARCH 2020
SEMESTER – 2 : CHEMISTRY (COMPLEMENTARY FOR PHYSICS / BOTANY / ZOOLOGY)
COURSE CODE: 19U2CPCHE2: BASIC ORGANIC CHEMISTRY
(For Regular 2019 Admission)

Time: Three Hours

Maximum Marks: 60

PART A

Answer all questions. Each question carries 1 mark.

1. Draw the geometrical isomers of maleic and fumaric acid.
2. What is meant by chirality?
3. Substances which undergo decomposition at or near boiling point are separated by
4. Give two examples of nucleophiles.
5. What are cross linked polymers? Give one example.
6. Represent the E and Z isomers of 3-chloro-pent-2-ene.
7. Define homolytic and heterolytic bond fission.
8. Zeigler-Natta catalyst is (1 × 8 = 8)

PART B

Answer any six questions. Each question carries 2 marks.

9. Explain the terms (i) enantiomers and (ii) diastereomers
10. Which is more acidic, benzoic acid or p-nitrobenzoic acid? Why?
11. How is nylon 6,6 prepared?
12. What is a free radical? Give one method of synthesis.
13. Why are tertiary carbocations more stable than primary carbocations?
14. Give one example each for S_N1 and S_N2 reactions.
15. Mention the important uses of natural rubber.
16. Write a brief note on recrystallisation. (2 × 6 = 12)

PART C

Answer any four questions. Each question carries 5 marks.

17. What is Friedel crafts alkylation? Give its mechanism.
18. Discuss the conformers of n-butane and comment on their stability.
19. Describe addition and condensation polymerization with suitable examples.
20. Differentiate between plastics, elastomers and fibres.
21. Compare the mechanisms of nitration and sulphonation of benzene.
22. Explain the addition of HBr to propene in the presence and absence of organic peroxides (5 × 4 = 20)

PART D

Answer any two questions. Each question carries 10 marks

23. Discuss in detail E₁ and E₂ elimination taking suitable examples.
24. Draw and describe the conformers of cyclohexane. Comment on the stability of different conformers using potential energy diagram.
25. Write a note on (a) biodegradable polymers and (b) environmental hazards due to polymers.
26. Write notes on:
(a) Hyperconjugation (b) Racemisation (c) Synthesis of phenol formaldehyde resin and
 (d) Synthetic rubbers

(10 × 2 = 20)
