Reg. No…….. Name…… **23U241-S**

B.Sc. DEGREE END SEMESTER EXAMINATION – MARCH 2023

SEMESTER **2 -: CHEMISTRY (COMPLEMENTARY FOR PHYSICS / BOTANY / ZOOLOGY)**

COURSE CODE: 15U2CPCHE2: BASIC ORGANIC CHEMISTRY

(For Supplementary – 2018/2017/2016/2015 Admissions)

Time: Three Hours Maximum Marks: 60

PART A

Answer all questions. Each question carries 1 mark.

1. 2-Butene exhibits …….. isomerism.
2. The dihedral angle between the two C-H bonds in staggered conformation of ethane is ……
3. Give one example for nucleophiles.
4. The type of hybridization involved in ethyne is …..
5. Acetic acid is a …… acid than benzoic acid. (stronger/weaker)
6. Among halides …….. shows maximum inductive effect.
7. …… polymer is used to make non-stick cookware.
8. Give an example of synthetic rubber.

(1 × 8 = 8)

PART B

Answer any six questions. Each question carries 2 marks.

9. What is the use of fractional distillation during the purification of organic compounds?
10. Differentiate between enantiomers and diastereomers.
11. What is meant by racemization
12. State and illustrate Saytzeff rule.
13. What is Markownikoff's rule?
14. What is meant by *meso* compound? Give one example.
15. Which is more acidic, chloroacetic acid or fluoroacetic acid? Why?
16. Write the preparation of two addition polymers. (2 × 6 = 12)

PART C

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

17. Write a short note on hyper conjugation.
18. What are geometrical isomers? How can we distinguish geometrical isomers from their physical properties?
19. Discuss the optical isomerism of lactic acid.
20. Discuss the mechanism of nitration of benzene.
21. Compare the stereochemistry of S_N1 and S_N2 reactions.
22. Name two synthetic rubbers. Discuss their preparation and properties.

(5 × 4 = 20)

PART D

Answer any two questions. Each question carries 10 marks.

23. a) Discuss briefly about the purification techniques sublimation and crystallization
    b) Write a short note on the conformational analysis of cyclohexane
24. a) Discuss the hybridization and shape of ethene and ethyne molecules. (6 marks)
    b) What are carbanions and free radicals? How are they generated? (4 marks)
25. a) Discuss briefly E1 and E2 mechanism
    b) Write a short note on synthetic rubbers.
26. a) Write a short note on the synthesis and applications of (i) PVC, (ii) nylon 6 (iii) neoprene iv) phenol-formaldehyde resin

(10 x 2 = 20)

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