QP CODE: 25802163

25802163

Reg No : .....

Name : .....

INTEGRATED MSC DEGREE EXAMINATION, APRIL 2025

Second Semester

INTEGRATED MSC BASIC SCIENCE-PHYSICS

COMPLEMENTARY - IPH2CM06 - CHEMISTRY - II FUNDAMENTALS OF ORGANIC CHEMISTRY

2021 Admission Onwards

C2A2B177

Time: 3 Hours Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. What are carbanions?
2. What are the two major types of electron displacement effects by which polarity is produced in an organic compound?
3. How will you explain the stability of alkenes based on hyperconjugation?
4. What is the reaction intermediate generated during S_N1 reactions of alkyl halides?
5. What is Saytzeff's rule?
6. What are diastereoisomers? Give one example.
7. What is meant by Newman projection method?
8. What are cross-linked polymers? Give one example.
9. What are the monomers of Nylon 66? Which polymerisation is responsible for the formation of Nylon 66?
10. Draw any two plasic recycling symbols wit their corresponding polymers.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. Write the structural formula of following compounds (i) 2,3-Dimethylbutanal (ii) Heptan-4-one (iii) 2,3-Dibromo-1-phenylpentane (iv) 2-Methylbutanoic acid (v) 3-Butenoic acid
12. Briefly discuss (i) Substitution reactions (ii) Addition reactions

13. What is Friedel Crafts alkylation? Give its mechanism.

14. Rationalise Markownikoff's rule on mechanistic grounds.

15. Write a short note on the interconversion of geometrical isomers.

16. Explain the conformations of methyl cyclohexane with special reference to ring flipping.

17. What are polyamides? Write a short note on Nylon 66.

18. What are the marketable forms of natural rubber? What are the four main factors affecting the process of vulcanization?

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. (i) Differentiate between homolytic and heterolytic cleavage. (ii) Using suitable arrow notation indicate the formation of reactive intermediates when the following covalent bonds undergo bond fission. (a) When Cl_2 undergoes homolytic fission (b) CH_3Cl undergoes heterolytic fission. (iii) Explain the classification of reagents into nucleophiles and electrophiles with examples.

20. Explain the following electron displacement effects (a) Steric effect (b) Mesomeric effect.

21. Discuss on the conformational analysis of n-butane.

22. Discuss about various synthetic rubbers.

(2×5=10 weightage)