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Reg. No. : .....

Name : .....

Fourth Semester M.Sc. Degree Examination, July 2024

Chemistry

CH 242 (b): ORGANIC CHEMISTRY IV

(2020 Admission Onwards)

Time : 3 Hours Max. Marks : 75

SECTION – A

Answer any **two** sub-questions among (a), (b), or (c) from each question.
Each sub-question carries **2** marks.

1. (a) What are the secondary metabolites in plants?

   (b) What is the main difference between organic and inorganic pigments?

   (c) What is the biological activity of estrone?

2. (a) What is mean by the host-guest system in molecular recognition?

   (b) What are the characteristics of the tobacco mosaic virus?

   (c) What are supramolecular Liquid crystals?

3. (a) What is mean by the lipophilicity of a drug?

   (b) Discuss the applications of combinatorial organic synthesis.

   (c) What are the factors affecting the drug action?

P.T.O.

4. (a) What is adenosine triphosphate used for?

   (b) What is the advantage of automated polypeptide synthesis?

   (c) What is the goal of Edman's degradation?

5. (a) How can we improve the atom economy?

   (b) Why biocatalysis are important?

   (c) How do microwave reactions work?

(10 × 2 = 20 Marks)

SECTION – B

Answer either (a) or (b) of each question. Each question carries **5** marks.

6. (a) Discuss the von Braun degradation method for the determination of carbon skeleton of alkaloids.

   (b) Describe the chemical synthesis of testosterone.

7. (a) Explain the various types of molecular receptors.

   (b) Discuss the role of self-association in living system.

8. (a) What are the limitations of solution phase peptide synthesis?

   (b) Briefly explain the synthesis of phenobarbital.

9. (a) Discuss the applications of Biodegradable polymers.

   (b) Explain the structure organization of poly nucleotides

10. (a) Discuss the main principles of green chemistry.

    (b) Discuss the main ideas of Green computing.

(5 × 5 = 25 Marks)

SECTION – C

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

11. Explain the various methods for the characterization of isolated compounds of plants.

12. Explain the importance of molecular recognition in DNA structure.

13. (a) Describe the synthesis of Sulfamethoxazole.

    (b) Explain the applications of computer aided drug design.

14. Explain the bond formation methods of peptides.

15. (a) Discuss the application of sonochemistry in organic synthesis

    (b) Compare the single-mode and multi-mode microwave cavities.

(3 × 10 = 30 Marks)

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