

Unit IV

8. (a) Describe the structural elucidation and synthesis of testosterone. 8
(b) Explain the biosynthesis of steroids. 8
9. (a) How will you confirm the ring size and position of two angular methyl groups in cholesterol ? 10
(b) Convert cholesterol to progesterone. 6



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Roll No.

31543

M.Sc. EXAMINATION, 2025

(Fourth Semester)

(2020-21 Onwards)

(Regular & Re-appear)

CHEMISTRY

Organic Chemistry Special-V

Time : 3 Hours]

[Maximum Marks : 80

Before answering the question-paper, candidates must ensure that they have been supplied with correct and complete question-paper. No complaint, in this regard will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

(Compulsory Question)

1. (a) What is Isosterism ? 2
- (b) What do you mean by structure activity relationship ? 2
- (c) What is Taxol ? 2
- (d) What are Antimetabolites ? 2
- (e) Explain Hofmann exhaustive methylation method in alkaloids. 2
- (f) Draw the structure of atropine. Where is it used ? 2
- (g) What are bile acids ? 2
- (h) What is Diels hydrocarbon ? 2

Unit I

2. Describe briefly the following : 6,5,5
 - (i) Induced fit theory of drug activity
 - (ii) Lipophilicity and partition coefficient
 - (iii) Bio-isosterism.
3. What are drug receptors ? Describe drug receptor interactions. 16

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2

Unit II

4. (a) Describe the role of alkylating agents and antimetabolites in the treatment of cancer. 10
- (b) Illustrate the synthesis and use of mechlorethamine. 6
5. (a) Explain the role of antibiotics to inhibit protein synthesis. 8
- (b) Describe the synthesis and uses of penicillin G. 8

Unit III

6. Explain the following : 6,5,5
 - (i) Classification of alkaloids based on nitrogen heterocyclic ring
 - (ii) Role of alkaloids in plants
 - (iii) Physiological action of alkaloids.
7. Describe the structural elucidation and synthesis of quinine. 16

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3

P.T.O.