PB **5254**

Roll No. _____ Total No. of Pages: 02

M.Sc. (Semester-IV) Examination - June - 2026
Chemistry
Paper - 4.3 CHEM
Chemistry of Natural Products
(Only for Organic Chemistry Specialization)

Time Allowed: Three Hours **Max. Marks: 70**
Min. Marks: 28

This question paper contains two sections as under :

Section-A **Max. Marks-20**

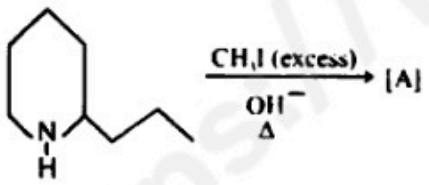
This section will have 10 questions, having 02 questions from each unit with no internal choice. Answer in about 20 words. All questions will have equal marks. (2×10=20)

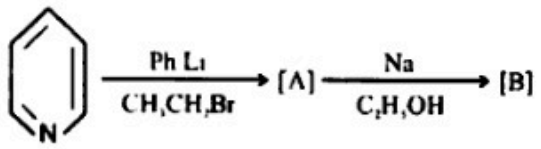
Section-B **Max. Marks-50**

This section will have 10 questions, having 02 questions from each unit, one question to be attempted from each unit. Words limit approximately 400-500 words. Questions may have sub divisions. All questions will have equal marks. (10×5=50)

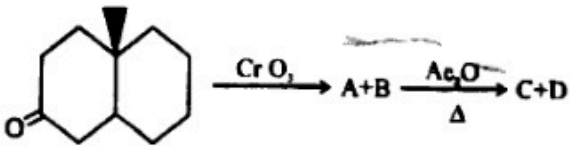
Section-A

1. (i) ***Explain the dehydrogenation of terpenoids.***
   (ii) Define biogenetic of Isoprene rule.
   (iii) Complete the reaction.

a) 

b) 

   (iv) Write the stereochemistry of Morphine.
   (v) What are steroids? Give the structure of Oestrone.
   (vi) Complete the following reaction :



   (vii) What are flavonoids? Give their classification.
   (viii) What is the importance of alkali fusion of flavonoid compounds?
   (ix) Describe the biological significance of Prostaglandin.
   (x) What are pyrethroids? How are they related to pyrethrins? 2×10=20

Section-B

Unit-I

2. a) Explain structural elucidation of α-terpineol.
   b) Confirm the structure of α-terpineol by using Perkin's synthesis or Alder-Vogt synthesis. 7+3=10

OR

Write notes on :
   a) Stereochemistry of camphor
   b) How phytol can be synthesized from farnesol
   c) What is Barbier - Wieland degradation. 4+3+3=10

Unit- II

3. Discuss the application of following degradation in the structure elucidation of alkaloids
   a) Hofmann degradation
   b) Emde degradation
   c) Van Braun's Method of degradation 3+3+4=10

OR

Give brief account of chemical evidences which established the structure of Ephedrine. Discuss its stereochemistry. Write all possible steps for conversion of C_6H_5-CHO) into Ephedrine. 6+2+2=10

Unit – III

4. Write short notes on any two of the following :
   a) Stereochemistry of steroids
   b) Androsterone
   c) Testosterone 5+5=10

OR

Explain the structure determination and synthesis of Aldosterone. 10

Unit- IV

5. How can Apigenia and quercetin be synthesized by the following methods (Any two methods)
   a) Chalcone method
   b) Allan-Robinson method
   c) Baker- Venkataraman method 2½×4=10

OR

Write short notes on any two-
   a) Synthesis of chlorophyll II
   b) Biosynthesis of Flavonoids
   c) Synthesis of Myrecetin 5+5=10

Unit- V

6. What are Rotenones? Discuss the physiological properties of rotenones. Give some important chemical reactions of rotenone. 10

OR

Write short notes on :
   a) Synthesis of PGE_2
   b) Synthesis of any two pyrethroids. 5+5=10

*****