

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN  
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)  
Chromepet, Chennai - 600 044.

M.Sc.Chemistry - END SEMESTER EXAMINATIONS - APRIL 2025

SEMESTER - II

**24PCHET2A02 - Heterocyclics and Natural Products**

Total Duration : 2 Hrs. 30 Mins.

Total Marks : 60

**Section B**

Answer any **SIX** questions ( $6 \times 5 = 30$  Marks)

1. Explain the aromaticity of imidazole using its electrophilic substitution reactions.
2. Discuss any two methods for the synthesis of flavones.
3. Write any two biological functions of carotenes.
4. Differentiate nucleotide and nucleoside with suitable illustration.
5. Explain the Merrifield method of synthesizing a polypeptide.
6. Prepare anthocyanidins from
  - i. Veratric acid and
  - ii. Phloroglucinol.
7. Convert cholesterol to progesterone.
8. Describe in brief the structure of RNA.

**Section C**

I - Answer any **TWO** questions ( $2 \times 10 = 20$  Marks)

9. a. Explain the synthesis of uric acid.  
b. Discuss the Fischer-Indole synthesis.
10. Evaluate the structure of morphine by its synthesis.
11. a. Describe the different methods of naming flavanoids.  
b. Ascertain the relationship between the structure of anthocyanidin and pH.
12. Discuss the Synthesis of Camphor and outline its various uses.

II - Compulsory question ( $1 \times 10 = 10$  Marks)

13. Compare the structure of DNA and RNA. Explain the protein synthesis by nucleic acids.

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