

M.Sc.(Chemistry) CBCS Pattern Semester-III  
**PSCHT11.2 - Paper-XI : Organic Chemistry Special - II**

P. Pages : 2

Time : Three Hours



GUG/W/23/11339

Max. Marks : 80

- Notes :
1. All questions are compulsory.
  2. All questions carry equal marks.
  3. Write reaction wherever necessary.

1. a) i) Write the synthesis of chlorophyll. 8  
ii) Explain stereochemistry of citral.

b) Explain isolation and occurrence of  $\beta$ -carotene. Discuss biosynthesis of  $\beta$ -carotene. 8

**OR**

c) Give the synthesis of  $\alpha$ -terpineol. 4

d) Explain stereochemistry of Vitamin-H. 4

e) Discuss the synthesis of hemoglobin. 4

f) Write the synthesis of citral. 4

2. a) Discuss synthesis and biosynthesis of Reserpine. 8

b) Elucidate the structure of nicotine. Give the synthesis of nicotine. 8

**OR**

c) Explain biosynthesis of morphine. 4

d) Give the synthesis of Reserpine acid. 4

e) Write the synthesis of Nicotine. 4

f) Give the synthesis of PGE<sub>2</sub>. 4

3. a) Discuss the Biosynthesis of flavonoids by Acetate pathway and Shikimic acid pathways. 8

b) Discuss occurrence, isolation and synthesis of Androsterone. 8

**OR**

c) Explain the stereochemistry of cholesterol. 4

d) Give the synthesis of Testosterone. 4

e) Write the synthesis of Quercetin. 4

f) Explain the synthesis of Myricetin. 4

4. a) Establish the structure and determine the size of ring in starch. 8
- b) What are amino acids? Explain the stereochemistry of amino acid. Discuss acid base property of amino acid. 8

**OR**

- c) Explain the naturally occurring sugars. 4
- d) Write note on End group analysis. 4
- e) Write steps to establish the structure of Lactose. 4
- f) Explain the term optical resolution of amino acids. 4
5. a) Give structure of Abietic acid. 2
- b) What are terpenoids? How are they classified? 2
- c) What are alkaloids? Give the structure of Ephedrine. 2
- d) Give the occurrence of alkaloids? 2
- e) Write short note on Diel's hydrocarbon. 2
- f) Write the structure of Cyanidin-7-arabinoside. 2
- g) Give the structures of cellulose and maltose. 2
- h) Write short note on Strecker synthesis. 2

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