

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

P. Pages : 2

Time : Three Hours



**GUG/W/24/11339**

Max. Marks : 80

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1. a) Explain isolation and occurrence of  $\beta$  -carotene. Discuss biosynthesis of  $\beta$  - carotene. 8
- b) Write the steps involved in the synthesis of hemoglobin. Explain its structure. 8

**OR**

- c) What are terpenoids? Discuss their classification. 4
- d) Give the synthesis of abietic acid. 4
- e) Give synthesis of phytol. 4
- f) Explain stereochemistry of vitamin – H 4
2. a) Outline the biosynthetic route of nicotine starting from aspartic acid. Comment on optical activity of nicotine. 8
- b) Give synthesis and structure of reserpine. Discuss biogenesis and physiological effect of PGF  $2\alpha$  . 8

**OR**

- c) Explain the physiological action of 4
- i) Alkaloids
- ii) Prostaglandins.
- d) How is the structure of menthol established. 4
- e) Describe the biosynthesis of ephedrine. 4
- f) Explain constitution of morphine. 4
3. a) Write the product of the treatment of estrone with each of the following. 8
- b) Discuss the acetate pathway of biosynthesis of Flavonoids? 8

**OR**

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|-----------|---|----------|
| c)        | Determine the structure of luteolin.                                    | 4        |
| d)        | Give the synthesis of bile acid.  | 4        |
| e)        | How will you prove the presence of angular methyl group in cholesterol? | 4        |
| f)        | Give the synthesis of testosterone.                                     | 4        |
| <b>4.</b> | a) Explain the following terms.   | <b>8</b> |
|           | i) Acid-Base property of amino acid                                     |          |
|           | ii) Stereochemistry of amino acids.                                     |          |
|           | b) How is structure of maltose established? Explain.                    | <b>8</b> |

**OR**

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|-----------|---|----------|
| c)        | What are carbohydrate? Give the classification of carbohydrates with suitable examples.     | 4        |
| d)        | Write steps to establish the structure of lactose.  | 4        |
| e)        | Explain the Strecker synthesis.   | 4        |
| f)        | Describe Haworth methylation method for the determination of molecular weight of cellulose. | 4        |
| <b>5.</b> | a) Give the structure of farnesol.  | <b>2</b> |
|           | b) Give the occurrence of prostaglandins.   | <b>2</b> |
|           | c) Write the structure of cyanidin – 7 – arabinoside.                                       | <b>2</b> |
|           | d) Write note on isoprene unit.   | <b>2</b> |
|           | e) Explain Diel's hydrocarbon of steroids.  | <b>2</b> |
|           | f) Mention the abnormalities of thyroxine deficiency in human bodies.                       | <b>2</b> |
|           | g) Give the structure of santonin.  | <b>2</b> |
|           | h) Write a note on occurrence of atropine.  | <b>2</b> |

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