

M.Sc.(Chemistry) (NEP Pattern) - Semester-III
STPG03CHE02 - Special Paper-II : Organic Chemistry

P. Pages : 2

Time : Three Hours



GUG/W/24/15961

Max. Marks : 80

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1. a) Explain isolation and occurrence of β -carotene. Discuss biosynthesis of β -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 2α . 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 biosystems of flavonoids. 8

OR

- c) Determine the structure of luteolin. 4
- d) Give the synthesis of bile acid. 4

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| e) | How will you prove the presence of angular methyl group in cholesterol? | 4 |
| f) | Give the synthesis of Testosterone. | 4 |
| 4. | a) Explain the following terms. | 8 |
| | i) Acid-base property of amino acid | |
| | ii) Stereochemistry of amino acids. | |
| | b) How is structure of Maltose established? Explain | 8 |

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 |
| 5. | a) Give the structure of farnesol. | 2 |
| | b) Give the occurrence of prostaglandins. | 2 |
| | c) Write the structure of cyanidin-7-arabinoside. | 2 |
| | d) Write note on isoprene unit. | 2 |
| | e) Explain Diel's hydrocarbon of steroids. | 2 |
| | f) Mention the abnormalities of thyroxine deficiency in human bodies. | 2 |
| | g) Give the structure of santonin. | 2 |
| | h) Write a note on occurrence of atropine | 2 |
