

UNIVERSITY OF JAFFNA, SRI LANKA
BACHELOR OF PHARMACY
THIRD YEAR FIRST SEMESTER EXAMINATION – OCTOBER 2019
PHACN 3124 CHEMISTRY OF NATURAL PRODUCTS

Date : 30.10.2019

Time : 3 Hours

Answer Part A and Part B in separate Answer book

Part A

Answer all Eight questions.

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| 1 | 1.1 Name the glycosides present in digitalisplant. | (10 Marks) |
| | 1.2 Briefly describe the hydrolysis of above mentioned any glycoside with their relevant structures. | (40 Marks) |
| | 1.3 Give the natural source, glycosidic linkage type, structure, pharmaceutical uses and their oxidative derivatives of emodin. | (50 Marks) |
| 2 | 2.1 Define 'terpenoids'. | (10Marks) |
| | 2.2 List the general methods for structure elucidation of terpenoids. | (30 Marks) |
| | 2.3 Explain the methods mentioned in 2.2. | (60Marks) |
| 3 | 3.1 Give the non-heterocyclic alkaloids. | (10Marks) |
| | 3.2 Enumerate the occurrence and distribution of natural alkaloids. | (45Marks) |
| | 3.3 Give the pharmaceutical uses of alkaloids with examples. | (45Marks) |
| 4 | Write a note on | |
| | 4.1 Monoterpenoids. | (30 Marks) |
| | 4.2 Glycoside linkage. | (35 Marks) |
| | 4.3 Properties of alkaloids. | (35 Marks) |

Part B

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| 5 | 5.1 List the evidences for cyclic structure of D-glucose. | (20 Marks) |
| | 5.2 Describe the methylation method to determine the ring size of glucose. | (50 Marks) |
| | 5.3 Write an account on starch. | (30 Marks) |
| 6 | 6.1 Name the essential amino acids. | (20 Marks) |
| | 6.2 Give the steps involved in the strecker synthesis of alanine with relevant chemical structures and reagents. | (40 Marks) |
| | 6.3 Draw and describe the secondary structures of protein. | (40 Marks) |

- 7 7.1 List and define the chemical parameters used in the analysis of fat and oils. (50 Marks)
- 7.2 List the properties of fixed oils. (20 Marks)
- 7.3 Explain the different types of rancidity of oils. (30 Marks)
- 8 8.1 Write the other names and give two (2) symptoms of deficiency of following vitamins.
- 4.1.1 Vitamin B₂. (5 Marks)
- 4.1.2 Vitamin B₉. (5 Marks)
- 4.1.3 Vitamin B₁₂. (5 Marks)
- 8.2 Give the steps involved in the conversion of pro vitamin D to active vitamin D with relevant chemical structures. (40 Marks)
- 8.3 Draw the chemical structures and give two (2) biological functions of following vitamins.
- 8.3.1 Vitamin A. (15 Marks)
- 8.3.2 Vitamin E. (15 Marks)
- 8.3.3 Vitamin K₂. (15 Marks)