



UNIVERSITY OF JAFFNA, SRI LANKA
FACULTY OF ALLIED HEALTH SCIENCES
THIRD YEAR FIRST SEMESTER EXAMINATION IN B. PHARM (Hons.) - 2019
PHACN 3124 CHEMISTRY OF NATURAL PRODUCTS

Date: 05.05.2021

Time: 03 Hours

Answer All EIGHT Questions.

Answer Part A, Part B in separate answer books

PART A

1. 1.1 1.1.1 Define mutarotation. (10 Marks)
- 1.1.2 Explain why the amount of β -glucopyranose exist higher than α -glucopyranose in aqueous. (40 Marks)
- 1.2 1.2.1 List the roles of carbohydrate containing structure in biology. (20 Marks)
- 1.2.2 Discuss how 3'-azido-3'-deoxythymidine (AZT) act as anti-HIV drug. (30 Marks)

PART B

2. 2.1 Define secondary metabolites. (20 Marks)
- 2.2 Briefly explain the functions of secondary metabolites in plants. (30 Marks)
- 2.3 Discuss the importance of natural products in drug discovery. (50 Marks)
3. 3.1 Write down the chemical properties of Alkaloids. (20 Marks)
- 3.2 Briefly explain medicinal importance of the isomerization of alkaloids. (30 Marks)
- 3.3 Briefly explain the steps involved in the isolation of morphine from opium powder. (50 Marks)
4. 4.1 Define glycosides. (20 Marks)
- 4.2 Write down the therapeutic uses of flavonoid glycosides. (30 Marks)
- 4.3 Write a short note on
 - 4.3.1 Cardiac Glycosides. (15 Marks)
 - 4.3.2 Thioglycosides. (15 Marks)
 - 4.3.3 Liquorice. (20 Marks)
5. 5.1 What are unsaturated fatty acids? (10 Marks)
- 5.2 List pharmaceutical uses of
 - 5.2.1 DHA (25 Marks)
 - 5.2.2 EPA (25 Marks)
- 5.3 Explain the preparation of beeswax. (40 Marks)

6. 6.1 6.1.1 Define monoterpenoids. (10 Marks)
6.1.2 Briefly explain the steps in the preparation of camphor. (30 Marks)
- 6.2 6.2.1 List the preparation methods involved in preparation of volatile oil. (20 Marks)
6.2.2 Discuss the pharmaceutical applications of volatile oils. (40 Marks)
7. 7.1 Write down the physicochemical properties of amino acids. (20 Marks)
7.2 List pharmaceutically important enzymes. (20 Marks)
7.3 Write a short note on one of the enzymes mentioned in 7.2. (40 Marks)
7.4 Briefly discuss the application of proteomics in medicine. (20 Marks)
8. 8.1 Write down the functions of carotenoids in plants. (20 Marks)
8.2 Briefly explain the properties and uses of
8.2.1 Lycopene. (30 Marks)
8.2.2 Vitamin A. (50 Marks)

