



**UNIVERSITY OF JAFFNA, SRI LANKA  
BACHELOR OF PHARMACY**

**FOURTH YEAR FIRST SEMESTER EXAMINATION — JANUARY 2016  
PHANP 4104 NATURAL PRODUCT CHEMISTRY - PAPER II**

**Date: 27.01.2016****Time: 2 Hours****Answer all Six questions.**

1.
  - 1.1 Classify the naturally occurring purines. (20 Marks)
  - 1.2 How can you confirm the position of oxygen atom at C6 position in caffeine? (40 Marks)
  - 1.3 Indicate how theophylline could be synthesized from uric acid? (40 Marks)
  
2.
  - 2.1 List the active compounds in adrenal cortex extract. (30 Marks)
  - 2.2 Draw the chemical structures for the following compounds. (30 Marks)
    - 2.2.1 Prednisolone
    - 2.2.2 Beclomethasone
    - 2.2.3 Hydrocortisone
  - 2.3 Show how do you synthesize testosterone by microbiological method? (40 Marks)
  
3.
  - 3.1 Give the basic structure of betalactum antibiotics. (20 Marks)
  - 3.2 Draw the structures of five naturally occurring Penicillins. (40 Marks)
  - 3.3 Discuss the Structure Activity Relationship of Penicillins. (40 Marks)
  
4.
  - 4.1 Name the sugars and their linkage present in Streptomycin. (15 Marks)
  - 4.2 How will you detect the presence of nitro group in chloramphenicol? (20 Marks)
  - 4.3 Give the synthesis of Chloramphenicol starting from p-nitroacetophenone. (65 Marks)
  
5. Write short notes on
  - 5.1 Diel's hydrocarbon. (30 Marks)
  - 5.2 Murexide reaction of uric acid. (30 Marks)
  - 5.3 Natural Oestrogens. (40 Marks)
  
6.
  - 6.1 List the natural bile acids. (20 Marks)
  - 6.2 How can you isolate bile acid from natural bile? (30 Marks)
  - 6.3 Draw the synthesis of progesterone from a sapogenin glycoside. (50 Marks)

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