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

**FOURTH YEAR FIRST SEMESTER EXAMINATION — February 2017**

**PHANP 4104 NATURAL PRODUCT CHEMISTRY — PAPER II**

**Date: 20.02.2017****Time: 2 Hours****Answer all six questions.**

- 1    1.1 Give four examples for naturally occurring purines. (20 Marks)  
      1.2 How would you detect the structure of uric acid by oxidation reactions? (40 Marks)  
      1.3 Show how do you synthesize caffeine from N,N-dimethyl urea and ethyl cyanoacetate. (40 Marks)
  
- 2    Write a note on  
      2.1 Sterols (30 Marks)  
      2.2 A<sup>1</sup> corticoids. (30 Marks)  
      2.3 Nomenclature of steroids (40 Marks)
  
- 3    3.1 List the beta lactam antibiotics other than penicillin. (20 Marks)  
      3.2 Draw the structure of penicillins and indicate the possible variations in structures which may occur in natural penicillins. (45 Marks)  
      3.3 Discuss the chemical instabilities of penicillins. (35 Marks)
  
- 4    4.1 Name three steroidal alkaloids and give a medicinal use for each. (25 Marks)  
      4.2 Briefly discuss about the steroidal glycosides. (35 Marks)  
      4.3 Write down the steps involve in the isolation of cardiac glycosides from a plant source and give the conditions which used at each step with explanation. (40 Marks)
  
- 5    5.1 Classify the antifungals with an example. (30 Marks)  
      5.2 Draw the structure of an antifungal drug having only fungistatic activity. (20 Marks)  
      5.3 Elucidate the structure of chloramphenicol. (50 Marks)
  
- 6    6.1 Write 3 natural estrane derivative sex hormones. (15 Marks)  
      6.2 Comment on their structure and activity differences. (30 Marks)  
      6.3 Give the synthesis of one of the above mentioned hormone from cholesterol (55 Marks)

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