

UNIVERSITY OF JAFFNA, SRI LANKA  
FACULTY OF ALLIED HEALTH SCIENCES  
FOURTH YEAR FIRST SEMESTER EXAMINATION IN BPharmHons-2020  
PHARMACEUTICAL ANALYSIS- PHAPA 4114

PAPER II

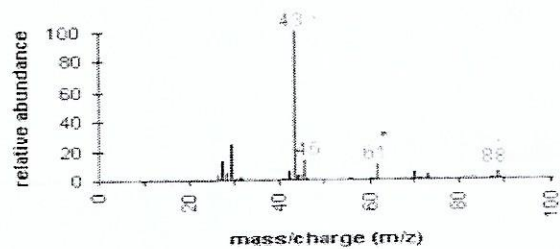
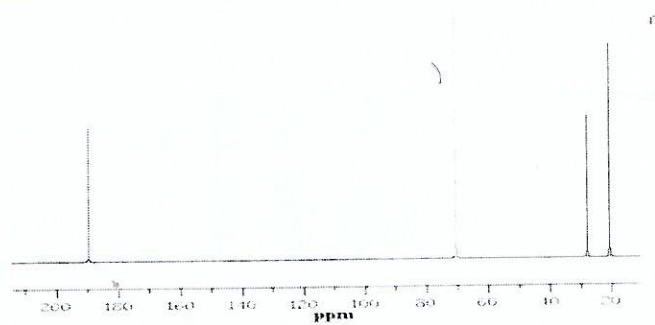
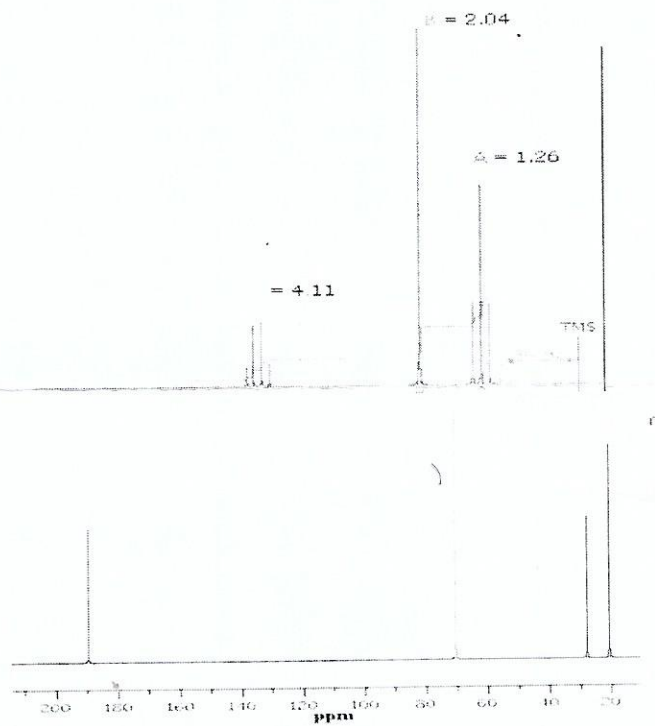
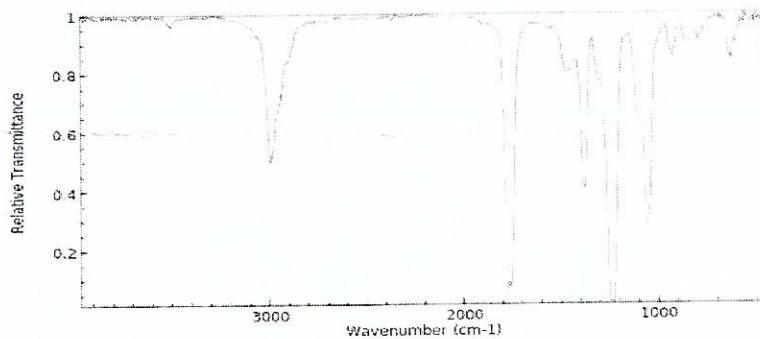
Date: 21 JUN 2022

Time: 2 Hours

ANSWER ALL THE SIX QUESTIONS

- 1 1.1 Define sublimation. (10 Marks)  
1.2 Briefly describe the theory of sublimation. (30 Marks)  
1.2 Discuss the sublimation techniques used to purify a sample. (60 Marks)
  
- 2 2.1 State the basic principle of Paper Chromatography. (20 Marks)  
2.2 Briefly explain the types of Paper Chromatography. (30 Marks)  
2.3 Explain how the paper chromatography technique could be used to identify the amino acids in a sample. (50 Marks)
  
- 3 3.1 3.1.1 Give the types of molecular vibration in Infrared Spectroscopy (IR)? (20 Marks)  
3.1.2 Briefly describe the type of molecular vibration in Infrared Spectroscopy. (30 Marks)  
3.2 Explain the instrumentation of Infrared Spectroscopy. (50 Marks)
  
- 4 4.1 Give the principle of size exclusion chromatography. (20 Marks)  
4.2 Sialylglycopeptide is extracted from the egg yolk powder. Explain how the size exclusion chromatographic technique could be used to purify the Sialylglycopeptide from the impurities. (60 Marks)  
4.3 Give the applications of size exclusion chromatography. (20 Marks)
  
- 5 5.1 Write an account on the followings:  
5.1.1 Flame photometry (50 Marks)  
5.1.2 Quality Assurance in pharmaceuticals (50 Marks)

- 6 A Compound X has a molecular formula of  $C_4H_8O_2$ . The structure of the compound X is analysed with IR,  $^1H$ -NMR,  $^{13}C$ -NMR and Mass spectroscopy. The analysed data of spectrums are given below.



- 6.1 Determine the degree of unsaturation for the compound X. (10 Marks)  
 6.2 Assign the spectrums of IR,  $^1H$ -NMR,  $^{13}C$ -NMR and Mass. (70 Marks)  
 6.3 Deduce the structure of the compound X. (20 Marks)