

(2½ hours)

Total marks: 60

N.B.: (1) All questions are **compulsory**.(2) **Figures** to the **right** indicate full **marks**.(3) Draw **neat** and **labeled diagrams** wherever necessary.

Q.1 (a) With labeled diagrams describe various types of interface used in Mass Spectrometry? **08**

OR

(a) What is Fast Atom Bombardment (FAB)? What are the pros and cons of this technique? **08**

(b) Write a note on different ion sources used in Mass Spectrometry? **07**

Q.2 (a) Explain with an example how adducts help in detection and quantitation of analytes in LC-MS technique. **08**

OR

(a) For impurity profiling, which type of Mass analyzer is preferred and Why? **08**

(b) Give detailed account of 'curtain gas and its uses' in LC-MS. **07**

Q.3 (a) With suitable diagram, describe various scan events possible in Triple Quad LC-MS/MS system. **08**

OR

(a) What is Tandem Mass Spectrometry? How do fragmentation techniques increase specificity of Mass detection? **08**

(b) Explain various applications of MALDI. **07**

Q.4 (a) Explain various applications of head space in GC analysis. **08**

OR

(a) How is ionization achieved in GC-MS technique? **08**

(b) Discuss the use of library in GC-MS analysis. **07**
