



JAL-1612040701060400 Seat No. _____

M. P. M. (Sem. VI) (CBCS) Examination

November – 2019

Pharmaceutical Analysis - IV

Time : 3 Hours]

[Total Marks : 80

Instructions :

- (1) Answer and tie up both the sections separately.
- (2) Figures to the right indicate marks.
- (3) Answer three (03) questions from each section.
- (4) Question one (01) and question five (05) are compulsory.
- (5) Draw neat and clean diagrams as required.

SECTION - I

- 1** Answer the following : (any seven) **14**
- (a) What is the application of CE-MS ?
 - (b) What is the principle of HPLC ?
 - (c) Explain the van Demeter equation.
 - (d) What are the applications of Chiral Chromatography ?
 - (e) Enlist the different types of stationary phase used for Normal phase and Reversed phase chromatography.
 - (f) What is the difference between LC-MS and LC-MS/MS ?
 - (g) Justify : RP-HPLC is method of choice for separation of polar compounds.
 - (h) What is the importance of temperature programming in GC ?
 - (i) What is the application of radio nuclides ?
 - (j) What are the importance of hyphenated techniques ?
- 2** Answer the following :
- (a) Write a brief note on instrumentation, application and limitation of HPTLC. **7**
 - (b) Write a note on Supercritical fluid chromatography. **6**

- 3 Answer the following :
- (a) What are the ideal requirements for HPLC detectors ? Mention in brief about different types of detectors used in HPLC instrument. 7
 - (b) Write a note on ion exchange and ion pair chromatography. 6

- 4 Answer the following :
- (a) Write a note on detectors used in Gas chromatography. 7
 - (b) Write a brief note on RIA. 6

SECTION - II

- 5 Answer the following : (any two) 14
- (a) Write a short note on Liquid scintillation system.
 - (b) Write a detailed note on HPLC instrumentation. What are the applications HPLC ?
 - (c) What are the differences between :
 - (a) HPLC and HPTLC
 - (b) GSC and GLC.

- 6 Answer the following :
- (a) What is the principle of Gas Chromatography ? Enlist the different components of GC instrument and draw the flow diagram of it. Write an informative note on column used in GC. 7
 - (b) Write short note on LC-MS and affinity chromatography. 6

- 7 Answer the following :
- (a) Write an informative note on GC-MS and ELISA. 7
 - (b) Write a brief note on gel permeation chromatography and flash chromatography. 6

- 8 Answer the following :
- (a) Explain in detail about isotope dilution analysis in radiochemical method. What are the uses of radioactive isotopes ? 7
 - (b) Write a note on GC-AES and LC-FTIR. 6