



PBA-014-003707

Seat No. _____

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

November / December - 2018

Pharmaceutical Analysis - V

Faculty Code : 014

Subject Code : 003707

Time : 3 Hours]

[Total Marks : 80

- Instructions :**
- (1) Answer and tie up both the sections separately.
 - (2) Figure to the right indicates marks.
 - (3) Answer the 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** Write any **seven** out of eight : **14**
- (a) Why TMS is used as reference compound in NMR ?
 - (b) Define molecular ion peak and metastable ion peak.
 - (c) Enlist application of mass spectrometry.
 - (d) Enlist various mass analyzers.
 - (e) Define coupling constant and state its significance.
 - (f) What is delta value of aromatic proton and aldehyde proton.
 - (g) Comment "¹²C is NMR active atom".
 - (h) What is the difference between proton and carbon 13 NMR ?
- 2** Answer the following :
- (a) Enumerate various thermal methods. Write a detailed **7** note on DTA with applications.
 - (b) Write a note on spin-spin coupling **6**
- 3** Answer the following :

- (a) Enlist ionization techniques used in MS. Explain chemical ionization technique in detail. 7
- (b) Write theory, principle and applications of Zone Electrophoresis. 6
- 4 Answer the following :
- (a) Explain Instrumentation and applications of PMR spectroscopy. 7
- (b) Discuss quadrupole as mass analyzers detail. 6

SECTION – II

- 5 Write any **two** out of three : 14
- (a) Discuss at length Isoelectric focusing.
- (b) Write principle of X-ray spectroscopy and describe X-ray sources.
- (c) Write a note on TGA/FTIR.
- 6 Answer the following :
- (a) Explain Mc-Lafferty rearrangement with one example. 7
- (b) Describe in brief Principle and Instrumentation of Mass spectroscopy. 6
- 7 Answer the following :
- (a) What is chemical shift ? Discuss the factors affecting the chemical shift. 7
- (b) Write a short note on DSC (differential scanning calorimetry). 6
- 8 Answer the following :
- (a) Explain Bragg's law and application of X-ray diffraction. 7
- (b) Explain various general rules for fragmentation in MS. 6