



**PBA-1612010701050400** Seat No. \_\_\_\_\_

**M. P. M. (Sem. V) (CBCS) Examination**

**November / December - 2018**

**Pharmaceutical Analysis**

Time : Hours]

[Total Marks : 80

- Instructions :**
- (1) Figure to the right indicates marks.
  - (2) Draw neat and clean diagrams as required.

**SECTION - I**

- 1** Answer the following question : (any **seven**) **14**
  - (1) Explain the term auxochrome, chromophore with example.
  - (2) Define the term wavelength, Frequency.
  - (3) Enumerate the name of experiment explain the particle properties Electromagnetic radiation.
  - (4) How will you differentiate the 1° Amine, 2° Amine, 3° Amine by IR.
  - (5) Explain the overtone peak with example.
  - (6) Draw the schematic diagram of Hollow cathod lamp.
  - (7) Comment : Excitation wavelength is more the emission wavelength in Fluorescence spectroscopy.
  - (8) Enumerate the name of chemicals used in calibration of UV Visible Spectrophotometer as per Pharmacopoeia.
  - (9) Differentiate the Nephelometry and Turbidimetry.
  - (10) Comment : Detector in UV spectroscopy is at 90° angle.
  
- 2** Answer the following :
  - (a) Explain different types of electronic transition in spectroscopy. Predict the type of electronic transition in dimethyl amine, methanol. **7**
  - (b) Discuss in detail factors affecting fluorescence intensity. **6**
  
- 3** Answer the following :
  - (a) Discuss simultaneous equation method for analysis of Binary Mixture. **7**
  - (b) Discuss constructions and working of Michelson interferometer. **6**

- 4 Answer the following :
- (a) Draw a well-labeled diagram of Atomic Absorption spectrophotometer and explain function of each component. 7
  - (b) Explain the principle, instrumentation and applications of ICP-AES. 6

## SECTION - II

- 5 Answer any **two** out of three questions :
- (a) State Beer's law. What is deviation from Beer's law, enlist various types of deviation and explain any one in detail. 7
  - (b) Write a brief note on sample handling in IR spectroscopy. 7
  - (c) Define : quenching and heavy atom effect. Explain various structural factors that influence fluorescence intensity. 7
- 6 Answer the following :
- (a) Discuss the basic instrumentation techniques of Raman spectroscopy. 7
  - (b) Give a detailed account of various regions of electromagnetic spectrum. 6
- 7 Answer the following :
- (a) Explain the Jablonski diagram of Fluorescence spectroscopy. 7
  - (b) Explain the wood ward Fieser rule with suitable example. 6
- 8 Answer the following :
- (a) Classify the different type of vibration in IR spectroscopy and explain each. 7
  - (b) Enumerate the application of UV visible spectroscopy and explain any two in detail. 6