



**PBA-014-003506**

Seat No. \_\_\_\_\_

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

**November / December - 2018**

**Pharmaceutical Analysis - III**

**Faculty Code : 014**

**Subject Code : 003506**

Time : 3 Hours]

[Total Marks : 80

- Instructions :**
- (1) Answer and tie up both 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** Answer any **seven** out of ten : **14**
- (1) Comment on : In presence of the polar solvent  $\pi - \pi^*$  transition produce bathochromic shift while  $n - \pi^*$  transition produces hypsochromic shift.
  - (2) Comment on : Cosmetic rays have lower frequencies as compared to UV rays.
  - (3) Comment on : aliphatic and alicyclic compound seldom show fluorescence.
  - (4) Differentiate chromophore and auxochrome with example.
  - (5) Discuss: Infrared spectra are usually plotted as percent transmittance rather than absorbance.
  - (6) Calculate the frequency of radiation whose wavelength is 500 nm. Express this wavelength in wave number.

- (7) Define : Red shift and Hyperchromic effect.
- (8) Draw filter wheel and select appropriate filters if solution to be analyzed is of violet and green color.
- (9) What is difference between fluorescence and phosphorescence ?
- (10) Define : (a) SSW, (b) Stray light.
- 2** Answer the following questions : **13**
- (1) Discuss Lambert-beer's law. Write about different factors that deviate beer's law. **7**
- (2) Discuss basic principle of UV-Visible spectrometry. Discuss different types of transition observed in molecules by giving example. **6**
- 3** Answer the following questions : **13**
- (1) What is difference between FT-IR and Dispersive IR. Give advantages of FT-IR spectrophotometer. **7**
- (2) Discuss properties of EMR and write about different types of spectra with an example. **6**
- 4** Answer the following questions : **13**
- (1) Discuss principle of atomic absorption and atomic emission spectroscopy. **7**
- (2) Write basic principle and discuss instrumentation of flame photometry. **6**

## SECTION - II

- 5** Answer any two out of three questions : **14**
- (1) Draw block diagram of IR spectrophotometer. Enlist different components of it and write a note on detector used in IR spectrophotometer. **7**
- (2) What is calibration? Discuss calibration of UV-Visible spectrophotometer. **7**
- (3) Write a note on : Turbidimetry or Nephelometry. **7**

- 6** Answer the following questions : **13**
- (1) What is vibration in IR spectrophotometry? Discuss different types of vibration in detail. **7**
  - (2) What is difference between spectroscopy and spectrometry? Write the basic principle of spectroscopy and classify it. **6**
- 7** Answer the following questions : **13**
- (1) Draw block diagram of UV-Visible spectrophotometer. Enlist different components of it and write in detail about any one component. **7**
  - (2) Discuss sample holding technique in IR spectrophotometer. **6**
- 8** Answer the following questions : **13**
- (1) What is difference between fluorescence and phosphorescence? Explain theory of both. **7**
  - (2) What is quenching? Explain process of quenching in fluorescence. Discuss factors responsible for quenching. **6**
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