

SUBJECT: PHARMACEUTICAL ANALYSIS-V

Day: -Thursday
Date: 15/11/2018

W-2018-4141

Time: 02.00 PM TO 05.00 PM
Max. Marks: 80

N.B:

- 1) **Q. No. 1 and Q. No. 5 are COMPULSORY.** Answer **ANY TWO** from the remaining from each Section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answer to the both sections should be written in **SEPARATE** answer book.

SECTION-I

- Q.1** Answer **ANY FIVE** of the following: **(10)**
- a) Define wave number and frequency.
 - b) List out the regions of EMR.
 - c) What do you mean by monochromator?
 - d) What is bathochromic shift?
 - e) Write the Beer's Lambert's Law.
 - f) Define the process of absorption and emission in spectroscopy.
- Q.2** a) Discuss the various components of an optical spectroscopic equipment. **(08)**
b) Write the properties of EMR. **(07)**
- Q.3** a) Discuss the electronic transition involved in UV-Vis spectroscopy. **(08)**
b) Discuss any two detectors used in UV-Vis spectroscopy. **(07)**
- Q.4** Write short notes on **ANY THREE** of the following: **(15)**
- a) Woodward-Fieser rules for dienes
 - b) Effect of conjugation in absorbance maxima
 - c) Calibration curve method of analysis
 - d) Limitations of Beer's Lambert's law

SECTION - II

- Q.5** Answer **ANY FIVE** of the following: **(10)**
- a) Write the basic requirements of a molecule to be IR active.
 - b) Write the IR frequencies for carbonyl, OH, NH and CH groups.
 - c) Write the principle of nephelometry.
 - d) Define fluorescence and phosphorescence.
 - e) Define Fermi resonance.
 - f) List out emission spectroscopic techniques.
- Q.6** a) Write the principle, instrumentation, working and applications of fluorimeter. **(15)**
- Q.7** a) Write the modes of molecular vibrations in IR spectroscopy. **(08)**
b) Discuss the detectors used in IR spectroscopy. **(07)**
- Q.8** Write short notes on **ANY THREE** of the following: **(15)**
- a) Instrumentation of nepheloturbidimetry
 - b) Turbidimetric titrations
 - c) Theory of Raman spectroscopy
 - d) Factors affecting IR absorptions