

Hemchandracharya North Gujarat University, Patan  
Bachelor of Vocation

'Pharmaceutical Chemistry' Semester - V  
END TERM Examination, December, 2018  
Subject: Advanced Analytical Chemistry-III

Paper - PC - 512

Date: 11/12/2018

Time: 2 hrs

Maximum marks: 50

**Q.1 Answer any 9 questions. Each question carries 1 mark (9\*1=9Marks)**

- 1) Give the range of IR Spectroscopy.
- 2) The detector used in IR spectroscopy is \_\_\_\_\_.
- 3) Which radiation source is commonly used in AAS ?
- 4) The life time of phosphorescence is between \_\_\_ to \_\_\_ seconds.
- 5) What is the full form of ATR and FTIR?
- 6) With increase in wavelength, the energy will \_\_\_\_ (increase/Decrease).
- 7) IR spectroscopy gives information about number of protons in a sample. (True/False)
- 8) The number of vibrational modes for linear molecules and non-linear molecules are \_\_\_\_\_.
- 9) What is the Fluorescence?
- 10) Match the following.

I

- (a) Hallow cathode lamp
- (b) Tungsten lamp
- (c) Beam Splitter

II

- (P) IR spectroscopy
- (Q) Atomic Absorption spectroscopy
- (R) UV-Visible

**Q.2 Answer any 5 questions. Each question carries 4 marks (5\*4=20 Marks)**

- 1) Write down the applications of UV spectroscopy.
- 2) Explain principle and working of FTIR.
- 3) Discuss: (a) Fluorescence and (b) Phosphorescence
- 4) Define Chemiluminescence. Which chemical reactions take place in chemiluminescence?
- 5) Explain different types of electronic transitions taking place in UV spectroscopy.
- 6) Define (1) Bathochromic Shift (2) Hypsochromic shift  
(3) Hyperchromic shift (4) Hypochromic shift

**Q.3 Answer any 3 questions. The question carries 07 marks (3\*7=21 Marks)**

- 1) Explain fluorescence and phosphorescence spectra with figure of a spectrum.
- 2) Explain the instrumentation of Flame Atomic Absorption Spectrophotometer.
- 3) Explain Instrumentation of UV spectroscopy.
- 4) Give applications of IR spectroscopy.