



**D-BP701T**

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

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

**March – 2022**

**Instrumental Methods of Analysis**

Time : 3 Hours]

[Total Marks : 75

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

**1 Answer the following question : 10×2=20**

- (a) How spectroscopy is helpful in pharmaceutical analysis?
- (b) In which conditions UV-Visible spectroscopy is not suitable for analysis?
- (c) State the Beer and Lambert's law with equation.
- (d) What is the difference between polychromatic and monochromatic radiations?
- (e) In spectroscopic estimation of drug, what is the role of calibration plot?
- (f) Comment: UV-Visible spectroscopy is basically used for qualitative analysis.
- (g) What is the limitation of AAS?
- (h) What are the disadvantages of gas chromatographic technique?
- (i) Why is plate activation required in TLC technique?
- (j) What is the normal phase and reverse phase HPLC?

**2 Answer any two out of the following questions : 2×10=20**

- (a) Explain different types of vibrations of IR spectroscopy. Give principle, instrumentation, and applications of IR spectroscopy.
- (b) Define, classify, and explain the principle of chromatographic techniques. Discuss the separation principle, instrumentation, and applications of HPLC.
- (c) Define and classify spectroscopy. Discuss the principle, instrumentation, and advantages of UV-Visible spectroscopy.

**3** Answer any **seven** out the following questions : **7×5=35**

- (a) Discuss the principle, and instrumentation of fluorimetry.
  - (b) Write a note on ion exchange chromatography.
  - (c) What is the working principle of gel chromatography? Discuss instrumentation and application of gel chromatography
  - (d) What is the principle of affinity chromatography and nepheloturbidometry.
  - (e) What is the difference between TLC and paper chromatography? What are the pharmaceutical applications of paper chromatography?
  - (f) Write a short note: Electrophoresis.
  - (g) Give the principle, and instrumentation of flame photometry.
  - (h) Give the principle, instrumentation, and applications of AAS.
  - (i) Write an informative note on adsorption and partition column chromatography.
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