

**FOURTH YEAR B.PHARM. EXAM**  
**PAPER IV – MODERN METHODS OF PHARMACEUTICAL**  
**ANALYSIS**

**Q.P. Code: 564270**

**Time: Three Hours**  
**(180 Min)**

**Maximum: 100 marks**

**I. Elaborate on:**

**(2X20=40)**

1. Derive an expression for beer-lamberts law and write the general principle, construction working of double beam UV spectrophotometer
2. a) Write the principle and applications of counter current extraction and gel filtration.  
b) Explain the principle and various types of curves in conductometric titrations.

**II. Write notes on:**

**(8X5=40)**

1. Explain the sample handling techniques in IR spectroscopy.
2. Explain the principle involved in nephlo- turbidimetry.
3. Write the sampling procedure as per GLP.
4. Explain the factors affecting fluorescence intensity.
5. What are the different detection techniques used in paper chromatography.
6. What are the Pharmaceutical applications of X-ray diffraction?
7. What are the different methods available to induce ionization of a sample in mass spectroscopy.
8. Explain amperometric titration curves with example.

**III. Short Answers on:**

**(10X2=20)**

1. Define the term Retention time.
2. What is chemical shift in NM
3. Explain Bathochromic shift.
4. Photoelectric colorimeter
5. Detectors used in Gas chromatography.
6. Give advantages of preparatory HPTLC plates.
7. Define singlet and triplet states.
8. Define diffusion current and residual current.
9. Explain dead stop end point technique.
10. Write any two factors which influence vibrational frequencies.

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