MPY - 101

M.Pharmacy I Semester

Examination, December 2014

Modern Analytical Technique

Time: Three Hours

Maximum Marks: 70 Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice, ii) All parts of each questions are to be attempted at one place, i i i) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max.400 words) carry 7 marks, iv) Except numericals. Derivation, Design and Drawing etc.

1. a) Define Beer lamberf s law. How it is useful in detennining concentration of an analyte?

b) Define Bathochromic shift and hypsochromic shift with examples.

c) How number and position of bands is calculated in i.r. spectrum of a compound?

d) What is woodward's rule? How it is useful in determining $A._{max}$ of a, P unsaturated butadienes.

Or

Give construction of a FT-IR. What are its advantages overlR?

2. a) Explain how shielding and deshielding effect chemical shift value.

b) Explain how coupling constant is significant in structure elucidation by MS.

c) Explain the principle and origin of 13_{CNMR} how it differs from

d) Explain Ionization Techniques in MS with emphasis on secondary ionization.

Or

Give instrumentation of a HPLC-MS.

3. a) What is Fluorescence? How it is produced?

b) What is Bragg"s equation. What are its applications?

c) Give theory and applications of ESR.

d) Give principle instrumentation and applications of Atomic Spectroscopy.

Or

Discuss theory, instrumentation and application of ultra centrifugation.

4. a) What are different techniques of chromatography? How they differ from each other?

b) What are the advantages of HPTLC over TLC?

c) Define the terms retention time, Retention volume and efficiency. How they are determined?

d) What are different components of HPLC? How mobile phase is optimised?

Or

Give general principle, instrumentation and applications ofORD.

5. a) What are different enzymatic assay methods?

b) What is thermogravimetry? What is its importance?

c) Give theory and method of RIA.

d) What is the principle of DSC? Give applications of DSC.

Or

Discuss principle and application of Flow cytometry.