Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No

MPY-101

M.Pharmacy I Semester

Examination, November 2018

Modern Analytical Technique

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. Describe loop injector and refractive index detector used in HPLC.

2. Explain the principle of Scanning Probe Microscope.

3. How can DSC be used for
   i) Purity testing and
   ii) Compatibility of API with excipients in a formulation over a period of time.

4. Describe the principle and working of Michelson interferometer.

5. Explain the principle of UV Spectrophotometer and discuss the instrumentation of the double beam UV spectrophotometer.

6. How will you differentiate the following by IR and NMR? $C_6H_5COCH_3$, $C_6H_5COOCH_3$ and $C_6H_5CH_2COCH_3$.

7. Describe the factors affecting the chemical shift.

8. Answer any four of the following:
   a) Integration data is difficult to use in ^{13}C NMR. Why?
   b) What is plane polarised light and circular polarised light?
   c) Why is CD technique more specific then ORD technique?
   d) Why is sensitivity of ^{13}C NMR less than ^{1}H NMR?
   e) Explain the IR spectrum of a diatomic molecule.
   f) Explain Bragg's Law.

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