

**FACULTY OF PHARMACY**

**M. Pharmacy (Common paper for all Specialization) I-Semester (PCI) (Suppl.)**  
**Examination, August 2019**

**Subject : Modern Pharmaceutical Analytical Techniques**

**Time: 3 Hrs**

**Max. Marks: 75**

**Note: Answer any five questions. All questions carry equal marks.**

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|----------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 1 a) Write Beer-Lambert's law and derive the expression                                                                                                  | 5  |
| b) Mention the different methods of quantitative analysis by uv-visible spectroscopy. Explain any one method in detail.                                  | 10 |
| 2. a) Explain the interpretation procedure of IR spectra of different organic compnds in detail. With examples of schematic IR spectra.                  |    |
| b) What is fluorescence? Write the factors affecting fluorescence.                                                                                       | 5  |
| 3. a) What is chemical shift? Write the factors influencing chemical shift?                                                                              | 8  |
| b) Write a note on FT-NMR                                                                                                                                | 7  |
| 4. a) Explain the instrumentations and working of mass spectrometer with schematic diagram.                                                              | 8  |
| b) Write the fragmentation patterns of different organic compnds observed in mass spectroscopy. With the help of schematic mass spectra of a few compnds | 7  |
| 5. Describe the components and working procedure of HPLC with a neat labeled block diagram.                                                              | 15 |
| 6. a) Write the principle, instrumentation and working of zone electrophoresis.                                                                          | 8  |
| b) Write the principle and theory of X-ray diffraction study using Brag's law                                                                            | 7  |
| 7. a) Write the principle and instrumentation of flame photometry                                                                                        | 7  |
| b) Write notes on any two GC detectors                                                                                                                   | 8  |
| 8. Explain the principle, equipment, procedure, advantages and applications of IR Spectrophotometer                                                      | 15 |

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