

Code No. 13179/PCI

**FACULTY OF PHARMACY****M. Pharmacy (Pharmaceutical Analysis) II-Semester (PCI) (Suppl.) Examination,  
February 2019****Subject: Advance Instrumental Analysis****Time: 3 Hrs****Max. Marks: 75****Note: Answer any five questions. All questions carry equal marks.**

- 1 Write the principle involved in HPLC and explain the following.  
(a) Peak shapes (b) Plate number (c) Plate height (10)  
(d) Explain various pumps used in HPLC. (5)
- 2 Explain the principle and stationary phases of the following: (2x7½)  
(a) Ion Exchange chromatography (b) Affinity chromatography
- 3 Write in detail about Instrumentation, columns and detectors used in Gas chromatography. (15)
- 4 (a) Explain the instrumentation and applications of super critical fluid chromatography. (7)  
(b) Explain characteristics and pharmaceutical analysis of capillary electrophoresis. (8)
- 5 (a) Explain the following ionization techniques  
(a) chemical ionization (b) FAB (c) ESI (9)  
(b) Explain fragmentation pattern of  
(a) Alcohols (b) Aldehydes (c) aliphatic acids (6)
- 6 Explain the following: (3x5)  
(a) Spin-spin coupling  
(b) Coupling constant  
(c) Nuclear magnetic double resonance
- 7 Write about the principles instrumentation and applications of : (2x7½)  
(a) TLC  
(b) Size exclusion chromatography
- 8 (a) Explain in detail about chiral stationary phases (CSPs). (6)  
(b) Explain principle and applications of HPTLC. (9)

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