



HDV-003-028106

Seat No. _____

P. G. D. S. A. I. T. (Sem. I) (CBCS) Examination

November / December – 2017

**PGDI-102 : Separation Science &
Hyphenated Techniques for Pharmaceutical &
Other Analysis**

Faculty Code : 003

Subject Code : 028106

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- Instructions :** (i) All questions carry equal marks.
(ii) All questions are compulsory.

1 Answer any seven of the following : 14

- (1) State the principle of HPLC.
- (2) Which HPLC method is preferable for polar component? Justify your answer.
- (3) Write the sequence for doing paper chromatography experiment.
- (4) Enlist the development techniques used in paper chromatography.
- (5) Write classification of spray reagent.
- (6) What are the limitations of solvents in LC-MS?
- (7) Enlist the difficulties arise when GC coupled with Mass spectrometer.
- (8) Define :
 - (i) Effluent
 - (ii) Elution
- (9) Differentiate: HPTLC and HPLC.
- (10) Write the principle of Gel-chromatography.

- 2** Answer following : (any **two**) **14**
- (1) Give the basic principle of NPD detector with Schematic diagram.
 - (2) Describe the characteristics of gases used in Gas chromatograph.
 - (3) Give a brief account on band broadening phenomenon in chromatography.
- 3** Answer the following : **14**
- (1) Explain quantitative estimation methods for paper chromatography.
 - (2) Draw the schematic diagram of HPTLC and discuss its functioning.
- OR**
- (1) Discuss the characteristic of mobile phase used in paper chromatography
 - (2) Why HPTLC is more superior over a TLC? Explain.
- 4** Answer the following : (any **two**) **14**
- (1) Give a brief account on "solvent delivering system" in HPLC.
 - (2) Compare the efficiency of HPLC with UPLC. Which one is better? Justify your answer.
 - (3) Discuss the types of column used in GC and HPLC.
- 5** Answer the following : (any **three**) **14**
- (1) Write note on tandem quadrupole mass analyser
 - (2) Write note on rate theory
 - (3) Write note on atmospheric pressure chemical ionization (APCI).
 - (4) Write note on universal detector in HPLC.