DDD-1389
M. Sc. (Part I) (Sem. II) (S.F.) Examination
April / May - 2016
Chemistry : Paper - IV
(Instrumental Methods) (Old Course)

Time : 3 Hours] 
[TOTAL MARKS : 70

Instructions:

(1) Fill up strictly the details of signs on your answer book.
Name of the Examination:
M. SC. (PART I) (SEM. II) (S.F.)
Name of the Subject:
CHEMISTRY : PAPER - IV
Seat No.:
Subject Code No.: 1 3 8 9
Section No. (1, 2,.....):

(2) All questions are compulsory.

(3) Figures to the right indicate full marks of the questions.

1 Answer any three of the following:
(a) Explain : sample injection system and its types in detail.
(b) How bonded phase support prepared ? Illustrate use of bonded phase in normal and reverse phase chromatography.
(c) Give the brief account on ion exchange equilibrium in liquid chromatography.
(d) Define and explain : normal phase, reversed phase chromatography and derivatization.

2 Answer any three of the following:
(a) How DSC technique is useful to analyze the polymer ? Explain in brief.
(b) Explain boundary potential for glass electrode.
(c) What is stripping voltammetry ? Explain in brief.
(d) Give the basic principle of thermogravimetric analysis and explain its instrumentation.

DDD-1389] 1 [Contd...
Answers any three of the following:

(a) Explain in detail: rotating crystal method and power crystal method.
(b) Give and explain the basic principle of dynamic light scattering. Explain experimental set up for DLS.
(c) Give the types of polarizing microscope. Describe in detail analyzer of polarizing microscope.
(d) Derive Wierl equation for electron diffraction.

Answer any three of the following:

(a) Explain: syringe pump and fluorescence detector in brief.
(b) Define and explain electron diffraction. Describe electron interaction with matter in brief.
(c) Explain the principle of liquid membrane electrode and gas sensing electrode.
(d) Give the basic principle and explain instrumentation of DSC.