DMM-1569
M. Sc. (Chemistry) (Sem. IV) Examination
April / May - 2016
Physical Chemistry (Spectroscopy) : Paper - II

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. (CHEMISTRY) (SEM. 4)
Name of the Subject : PHYSICAL CHEMISTRY (SPECTROSCOPY) : PAPER - II

(2) Attempt all four questions.
(3) Figures to the right indicate full marks.

1 Answer any 3 from the following : 18
(a) Discuss principle of X-ray fluorescence. Give its applications.
(b) Explain the principle and applications of x-ray diffraction.
(c) Write a note on wavelength and energy dispersive device.
(d) Write a note on x-ray absorption technique.

2 Answer any 3 from the following : 18
(a) What is the basic principle of AAS? Write a note on burners in AAS.
(b) Describe radiation sources used in AAS.
(c) Describe method used in quantitative spectroscopy.
(d) Compare AAS with FES.
3 Answer any 3 from the following:

(a) Describe instrumentation and working of ESR.
(b) Determine $K_{in}$ of indicator by UV-Visible spectroscopy.
(c) Describe application of UV-Visible spectroscopy.
(d) Explain zero field splitting and Cramer degeneracy.

4 Answer any 4 from the following:

(a) Sample handling and detector in atomic x-ray spectroscopy.
(b) Write a note on X-ray fluorescence.
(c) Write a note on types emission spectra.
(d) Describe applications of AAS.
(e) Explain hyperfine and superhyperfine in splitting.
(f) Application of UV-Vis in determination of two components in a mixture.