

B.Sc. (FS) Semester - 2 (NEP-2020) Examination**MARCH/APRIL-2026****General Concept of Spectroscopic Techniques (Major-3)****Time: 2:00 Hours****Marks: 50****Instructions:**

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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Que. 1 Answer any one in details. (Any one) (10)

- 1) Describe Refraction, Polarization, Diffraction, Dispersion and interference with figure.
- 2) What are Spectra? Explain types of spectra and quantum number.

Que. 2 Answer any one in details. (Any one) (10)

- 1) What is IR spectroscopy? Elaborate the degree of freedom in molecule.
- 2) Describe the instrumentation of Raman spectroscopy with block diagram.

Que. 3 Answer any one in details. (Any one) (10)

- 1) Draw the block diagram of U.V. spectroscopy and elaborate the detector and monochromator of U.V. spectroscopy.
- 2) What are lamberts and beer's law? and Describe theory of U.V. spectroscopy.

Que. 4 Answer any one in details. (Any one) (10)

- 1) What is X- ray? Discuss about the production and working of X- Ray.
- 2) Write a note on types of X-ray spectroscopy and instrumentation of X – Ray spectroscopy.

Que. 5 Answer any one in details. (Any one) (10)

- 1) Write a note on FTIR spectroscopy.
- 2) Write a note on types of Raman spectroscopy and difference between IR and Raman spectroscopy.
