

## B.Sc. (FS) Semester - 2 (NEP-2020) Examination

JUNE – 2024

## 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 Reflection, Refraction, Polarization, Diffraction, Dispersion & Phosphorescence with figure.
  2. Write a note on types of spectra and quantum number.
- Que.2 Answer any one in details. (Any one) (10)
1. Write a note on FTIR with figure.
  2. Describe the instrumentation of Raman spectroscopy with block diagram.
- Que.3 Answer any one in details. (Any one) (10)
1. What are lamberts and beer's law? and describe theory of U.V. spectroscopy.
  2. Draw the block diagram of U.V. spectroscopy and elaborate the source and monochromator of U.V. spectroscopy.
- Que.4 Answer any one in details. (Any one) (10)
1. What is X- ray? Write the range of X- Ray and 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 theory of IR spectroscopy and degree of freedom.
  2. Write a note on theory of Raman spectroscopy and difference between IR and Raman spectroscopy .

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