

B.Sc. DEGREE EXAMINATION, EVEN SEMESTER 2021
III Year VI Semester
SPECTROSCOPY AND LASER PHYSICS

Max.marks :25

Answer any **FIVE** questions ($5 \times 5 = 25$) Marks

1. Obtain the rotational energy levels allowed to the rigid diatomic molecules.
2. Explain the instrumentation details of UV-visible spectrometer with suitable diagram.
3. Obtain the vibrational energy levels and allowed transitions for a diatomic molecules undergoing simple harmonic motion.
4. Explain the molecular polarizability based on quantum theory of Raman effect.
5. Write a note on energy levels and selection rules for pure rotational Raman spectra.
6. Explain stimulated absorption and stimulated emission in laser process.
7. Explain how a hologram is prepared and viewed.