

Sardar Bhagwan Singh University  
M. Sc Chemistry  
IV Semester  
Subject : Spectroscopy

- Q1. Write applications of the following -
- Optical rotatory dispersion
  - Mass spectroscopy
  - Nuclear magnetic resonance
  - Chromatography
  - Electron spin resonance spectroscopy
  - X-ray crystallography
- Q2. Write note on production of X-rays for X-ray crystallography.
- Q3. Write note on rotating crystal technique in X-ray crystallography.
- Q4. Write note on circular dichroism. How it relates to ORD?
- Q5. Define octant rule and write its applications.
- Q6. What do you understand by cotton effect? How it relates to ORD and CD.
- Q7. What is the significance of time of flight in Mass spectroscopy?
- Q8. Name the type of crystals and calculate number of atoms per unit cell w.r.t X-ray crystallography.
- Q9. What do you understand by coupling constants? Explain with reference to NMR.
- Q10. Note on instrumentation of Gel electrophoresis. How it help in separation of DNA?