

- a) Explain each quantum number with their physical interpretation. **07**
- b) How one can comment on the total angular momentum of many electron system using J-J coupling scheme? **07**
- Q-6** **Attempt all questions** **(14)**
- a) Explain in detail Anomalous Zeeman effect. **08**
- b) Discuss the process diffraction using X-rays making use of the Bragg's law. **06**
- Q-7** **Attempt all questions** **(14)**
- a) Explain production of X-rays with suitable diagram. **07**
- b) Give the classical interpretation of Normal Zeeman Effect. **07**
- Q-8** **Attempt all questions** **(14)**
- a) Compare: Optical and X-ray spectra **04**
- b) Write a note on : Absorption spectrum **04**
- c) State how Moseley's law justified the nuclear model of atoms? **06**

