



- Q-4**                      **Attempt all questions**                      (14)
- (a) Explain the principle, construction and working of the apparatus used for the (09)  
production of X-Rays.
- (b) State and derive the Bragg's law of Diffraction (05)
- Q-5**                      **Attempt all questions**                      (14)
- (a) Write a note on PN junction diodes. (07)
- (b) Define the following (03)  
i) Lattice, ii) Basis and iii) coordination number
- (c) Give the difference between continuous and line spectra. (04)
- Q-6**                      **Attempt all questions**                      (14)
- (a) What are synclastic and anticlastic surfaces? (07)
- (b) Explain how viscosities of fluids vary with temperature? (07)
- Q-7**                      **Attempt all questions**                      (14)
- (a) Explain the construction and working of light emitting diode. (07)
- (b) Explain the working of a photodiode and also describe the characteristics of a (07)  
photodiode.
- Q-8**                      **Attempt all questions**                      (14)
- (a) Explain the working principle of NPN transistor. (04)
- (b) What is Common emitter configuration? Establish the relation between  $\alpha$  and  $\beta$ . (10)

