

13. a) Explain the various properties obtained from tensile test using stress-strain curve. *13,K2,CO3*

OR

b) What is fracture? Discuss the different types of fracture. *13,K2,CO3*

14. a) Discuss the domain structure in ferromagnetic materials. Show how the hysteresis curve is explained on the basis of domain theory. *13,K2,CO4*

OR

b) What is meant by local field in a dielectric? And how it is calculated for a cubic structure? Deduce the Clausius – Mosotti relation. *13,K2,CO4*

15. a) What are metallic glasses? Describe the preparation, properties and applications of metallic glasses. *13,K2,CO5*

OR

b) Describe about Nano phase Material Properties and Applications *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) (i) List and explain the properties of Superconductors. *10,K2,CO6*

(ii) Prove that susceptibility of superconductor is -1 and relative permeability is zero. *5,K2,CO6*

OR

b) What are shape memory alloys (SMA)? Describe the characteristics of SMA and its applications. *15,K2,CO6*