

SE/MTRX/sem-III/CBSGS/S.H. 2018 dt- 4/12/2018
Q.P. Code :11085

[Time: Three Hours]

[Marks:80]

- N.B:
1. Question.No.1 is compulsory.
 2. Attempt any three questions from remaining five questions.
 3. Draw neat well labeled sketches.
 4. Figure at right side indicate marks.

- Q.1 Attempt any four questions. 20
- a. Differentiate between ductile and brittle fracture.
 - b. Explain the deformation mechanism by twinning.
 - c. Write a short note on surface hardening processes.
 - d. Classify engineering ceramics and list the properties of any two of them.
 - e. Describe the term electrostriction in detail. 10
- Q.2 10
- a. What is fatigue? Explain fatigue testing in detail.
 - b. What do you mean by Nano – materials? Explain their properties and practical applications. 10
- Q.3 10
- a. Elaborate on the role of optical Fibers in communication.
 - b. What is the effect of temperature on thermoplastics? Explain the mechanical properties of thermosetting polymers and elastomers. 10
- Q.4 10
- a. Classify crystal imperfections in detail. Distinguish between edge and screw dislocations.
 - b. Draw Iron – Iron Carbide diagram and explain Eutectoid and Eutectic transformation in detail. 10
- Q.5 10
- a. Explain powder metallurgy manufacturing process in detail. Give the limitations of powder metallurgy. 10
 - b. What is meant by Rheological fluids? Explain its types with suitable examples. 10
- Q.6 Write a short note any four 20
- a. Composite materials
 - b. Normalizing
 - c. Photoconductivity
 - d. Influence of important factors on fatigue
 - e. Nickel alloys