



M.Tech I Semester Supplementary Examinations August/September 2018

MATERIALS TECHNOLOGY

(Machine Design)

(For students admitted in 2013, 2014, 2015 & 2016 only)

Time: 3 hours

Max. Marks: 60

Answer any FIVE questions
All questions carry equal marks

- 1 Derive the equation for grain boundary strengthening.
- 2 Explain in detail about the deformation of non crystalline materials.
- 3 With neat sketch explain the measurement of fatigue and creep properties of the material.
- 4 (a) Explain the properties and application of HSLA steel.
(b) Briefly explain the chemical composition, properties and applications of maraging steel.
- 5 What is smart material? List the factors that control the smart materials. Discuss in detail about the characteristics and application on smart materials.
- 6 (a) Briefly explain the structure, properties and application of ABS and PMMA.
(b) List the various foams used for engineering application and state its properties.
- 7 Discuss in detail about the properties, processing and application of WC and Al_2O_3 .
- 8 Explain in detail about the properties, processing of Aramid and Boron fiber used in composite fabrication.
