Code: 9D15105

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
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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.

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