

R18

Code No: 158AR

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech IV Year II Semester Examinations, July/August - 2022

DESIGN AND SELECTION OF ENGINEERING MATERIALS

(Metallurgical and Materials Engineering)

Time: 3 Hours

Max.Marks:75

**Answer any five questions
All questions carry equal marks**

1. Explain the material selection process with help of charts. [15]
2. Explain the material attributes for the selection of materials. [15]
3. Explain how the structure and properties of materials influence the selection of materials in a particular design of a component in automobile industry. [15]
4. Among the steels and cast iron how would you select the materials for an engine part in automobile industry? Explain in detail. [15]
5. Explain the creep fatigue interactions with an example. [15]
6. Explain the role of DBTT in designing the components for Naval applications. [15]
7. Explain the process for designing of an alloy for fission and fusion reactors. [15]
8. Explain the selection criteria in designing a ceramic based component for high temperature applications. [15]

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