

**UNIT – I**

2. Explain Interfacial and volume defects in detail. 15
3. Write in detail about Tensile, compression and torsion tests. 15

**UNIT – II**

4. Write in detail about stress intensity factor approach and Griffith criterion. 15
5. Discuss about :
- (a) Fracture with fatigue 10
- (b) SN curve 5

**UNIT – III**

6. Explain with neat sketches TTT-curve. 15
7. Write in detail about microstructural aspects of ferrite and cementite. 15

**UNIT – IV**

8. Discuss about :
- (a) Annealing and Tempering 8
- (b) Plasma hardening 7

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9. Write about :

- (a) Properties of tool steel 8
- (b) Nickel based superalloys 7

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Roll No. ....

**3115**

**B. Tech. 4th Semester (ME)  
Examination – May, 2023**

**MATERIALS ENGINEERING**

Paper: PCC-ME-208-G

*Time : Three hours ]*

*[ Maximum Marks : 75*

*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

**Note :** Attempt *five* questions in all, selecting *one* question from each Unit. Question No. 1 is *compulsory*. All questions carry equal marks.

1. (a) Define resilience.
- (b) What is Hardness ?
- (c) What do you understand by non-destructive testing ?
- (d) Define an Alloy.
- (e) What is carburizing ?
- (f) Write about case hardening. 2.5 × 6 = 15

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