

Roll No.

23376

**M. Tech. 1st Sem. Civil Engg. (Specialisation
in structural Engg.)**

Examination – February, 2022

MATERIAL TECHNOLOGY

Paper : CE-601/MTSD-101

Time : Three hours]

[Maximum Marks : 100

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. All questions carry equal marks.

1. Discuss the use of Larsen-Miller parameter in the assessment of creep life. 20

2. Discuss the phenomenon of work hardening and its effects on metals. 20

3. What are different fatigue properties ? How to enumerate fatigue strength for different stresses ? 20

4. Which strengthening mechanism is relied for high temperature application ? Justify. 20
5. (a) Explain theory of dislocations. 10
(b) Explain durability of concrete. 10
6. (a) Write short notes biaxial strength of concrete. 10
(b) What is the nature of fatigue failure ? Explain. 10
7. Explain the strength range, composition and processing involved in maraging steel. Also mention its applications. 20
8. (a) Explain true stress-strain curve for simple tension. 10
(b) What is alkali-aggregate reaction ? And how will it affect the concrete properties ? 10
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