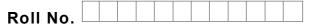
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## M.Tech. Civil Engg EL-I (2016 Batch) (Sem.-2) INTRODUCTION TO THE THEORY OF PLASTICITY Subject Code : MTEC-209 Paper ID : [74302]

## Time: 3 Hrs.

Max. Marks: 100

## **INSTRUCTION TO CANDIDATES :**

- Attempt any FIVE questions out of EIGHT questions. 1.
- 2. Each question carries TWENTY marks.
- Q1. a) Mention assumptions made in slip line field theory.
  - b) Mention important properties of slip lines.
- Q2. Explain various theories of plastic flow.
- Q3. What do you understand by yield criteria? Explain any two yield criterias commonly used.
- Q4. Explain the various factors affecting plastic deformation. Give examples. Explain strain FirstRan hardening phenomenon.
- Q5. Explain the following :
  - a) Upper bound theorem
  - b) Bauschinger effect
  - c) Illyushin's principle
  - d) Shakedown Theorem
- Q6. What is constraint? Is constraint equally important in elasticity and plasticity?
- Q7. Explain Drucker's postulate, Convexity and Normality Flow Rule.
- Q8. Explain uniaxial tensile test.