Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐☐   Total No. of Pages : 01

Total No. of Questions : 08

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 :
1. Attempt any FIVE questions out of EIGHT questions.
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 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.