

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – II • EXAMINATION – WINTER • 2013

Subject code: 1722801

Date: 24-12-2013

Subject Name: Mechanics of Metal Forming

Time: 10.30 am – 01.00 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain the basic principle of metal forming **07**
(b) Explain different characteristics of engineering strain and true strain. **07**
- Q.2** (a) Explain the slab analysis for sheet drawing. **07**
(b) Explain slip line theory. **07**
- OR**
- (b) Explain the importance of upper bound & lower bound theory in forging. **07**
- Q.3** (a) Explain the importance of CAD/CAM application in extrusion, forging. **07**
(b) How does Mohr's circle help in analysis of metal forming? **07**
- OR**
- Q.3** (a) Explain bending theory with various stresses. **07**
(b) What do you mean by plastic instability in tension test? **07**
- Q.4** (a) Discuss bulge test. Explain its importance. **07**
(b) Differentiate between local & bulk deformation. **07**
- OR**
- Q.4** (a) What is super plasticity & Strain rate? **07**
Q.4 (b) Explain the effect of strain rate in metal forming. **07**
- Q.5** (a) What is Hill's anisotropic plasticity theory? **07**
(b) What is Baushinger effect? **07**
- OR**
- Q.5** (a) Explain types necking in biaxial stretching. **07**
(b) Explain various extrusion processes **07**
