

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E –IIst SEMESTER–EXAMINATION – JULY- 2012

Subject code: 1722801

Date: 06/07/2012

Subject Name: Mechanics of Metal Forming

Time: 10:30 am – 13:00 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) What is work hardening & how does it affect the mechanical properties **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) Explain stress strain relationship in plastic deformation. **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 localized necking in biaxial stretching. **07**
(b) Explain various extrusion processes **07**
