

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI • EXAMINATION – SUMMER 2013****Subject Code: 163402****Date: 27-05-2013****Subject Name: Metal Forming Processes****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) Define Stress. Explain the components and types of stress. **07**
(b) Explain the comparison of yield criteria. Discuss briefly the Von mises yield criteria. **07**
- Q.2** (a) Define Forming. Explain briefly the classification of forming processes. **07**
(b) Explain the strain rate and metallurgical structure on metal working with neat sketch. **07**
- OR**
- (b) Define Forging. Discuss briefly the types of presses and hammers with a neat sketch. **07**
- Q.3** (a) Explain the classification of Forging process and discuss about the open die forging and closed die forging with a neat sketch. **07**
(b) Explain the different forging operations with a neat sketch. Discuss about the typical forging defects. **07**
- OR**
- Q.3** (a) Define Rolling. Explain the hot rolling and cold rolling with a neat sketch. **07**
(b) Explain the different types of rolling processes. Discuss the fundamental concept of metal rolling with a neat sketch. **07**
- Q.4** (a) What is extrusion? Explain briefly the classification of Extrusion processes. **07**
(b) Explain the Hydrostatic extrusion with a neat sketch and discuss its advantages & disadvantages. **07**
- OR**
- Q.4** (a) Explain the Production of seamless pipe and tubing processes with the neat sketches. **07**
(b) Explain the wire drawing processes with a neat sketch. Discuss about the defects in rod and wire drawing. **07**
- Q.5** (a) Briefly explain the Shearing, Blanking, Bending, Stretch forming and deep drawing forming methods with a neat sketch. **07**
(b) Explain the different types of dies used in press working with a neat sketch. **07**
- OR**
- Q.5** (a) Explain briefly the operation and working of Explosive forming with a neat sketch. **07**
(b) Explain briefly the operation and working of Electromagnetic forming with a neat sketch. **07**
