

GUJARAT TECHNOLOGICAL UNIVERSITY**B. E. Sem-VI Examination May 2011****Subject code: 162503****Subject Name: Metal Forming Processes****Date: 21/05/2011****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) Classify the metal forming processes. Explain its advantages, limitations and applications. **07**
- (b) Explain the Hot and Cold Working Processes and It's Effect on Mechanical Properties. **07**

- Q.2** (a) Explain (1) Slip, (2) Elastic and Plastic deformation, (3) Yield criteria, **07**
- (b) What is strain rate? Briefly explain factors affecting strain rate. **07**

OR

- (b) Define (1) Fracture, (2) Creep, (3) Fatigue. **07**

- Q.3** (a) Explain the Mode & Types of fractures and its influence in service life of part. **07**
- (b) Classify the Rolling Processes with neat sketch. Explain the Planetary rolling mill. **07**

OR

- Q.3** (a) Write the Operation and Principal of forging process. Explain Open and Close Die Forging Processes. **07**
- (b) Explain the Defects and Properties of Forged Products. **07**

- Q.4** (a) Explain the Force Analysis in forging in brief with neat sketch. **07**
- (b) Explain the Extrusion processes. Differentiate forward extrusion and backward extrusion with neat sketch. **07**

OR

- Q.4** (a) Explain the Extrusion of pipes by cold working in detail with neat sketch. **07**
- (b) Classify the Drawing processes. Explain Tube of Wire Drawing Process. **07**

- Q.5** (a) Explain the Hydrostatic Extrusion. Write its merits and demerits. **07**
- (b) Explain the magnetic pulse forming. **07**

OR

- Q.5** (a) Explain the principal of metal spinning with neat sketch. Write its merits, demerits and applications. **07**
- (b) Explain the High Velocity Forming and High Energy Rate Forming of metals. **07**
