| Seat No.: | Enrolment No. |
|-----------|---------------|
| | |

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI • EXAMINATION - SUMMER 2013

| Subje | ect (| Code: 162503 Date: 03-06-20 | 13 |
|------------|------------|---|----------|
| • | | Name: Metal Forming Processes .30 am - 01.00 pm Total Marks: | 70 |
| Instru | | <u> -</u> | 70 |
| | 1. 2. | Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. | |
| Q.1 | (a) | Explain effects of temperature, strain rate, microstructure and friction in metal forming-yield criteria and their significance. | 07 |
| | (b) | • | 07 |
| Q.2 | (a) | Explain the Mode & Types of fractures and its influence in service life of part. | 07 |
| | (b) | • | 07 |
| | (b) | Fatigue failure curves, fatigue tests of material & method to improve fatigue Resistance. Explain | 07 |
| Q.3 | (a) (b) | Explain the Force Analysis in forging in brief with neat sketch. Explain the Defects and Properties of Forged Products. OR | 07 07 |
| Q.3 | (a) | Classify the Rolling Processes with neat sketch. Explain the Planetary rolling mill. | 07 |
| | (b) | What is strain rate? Briefly explain factors affecting strain rate | 07 |
| Q.4 | (a) (b) | Explain Pipe and tube production by rolling processes. How calculate the Rolling Load? Explain OR | 07 07 |
| Q.4 Q.4 | (a) (b) | Differentiate Open and Close Die Forging Processes. Explain the Extrusion processes. Differentiate forward extrusion and backward extrusion with neat sketch. | 07 07 |
| Q.5 | (a) | Explain the principal of metal spinning with neat sketch. Write its merits, demerits and applications. | 07 |
| | (b) | Classify the Drawing processes. Explain Tube of Wire Drawing Process. | 07 |
| Q.5 | (a) | OR Explain the High Velocity Forming and High Energy Rate Forming | 07 |
| χ | (b) | of metals. | 07 |
| | | | |
