Seat No.:	Enrolment No.

Subject Code:182101

Subject Name:Metal Working Processes

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII EXAMINATION - SUMMER 2016

Date:10/05/2016

Time:10:30 AM to 01:00 PM **Total Marks: 70 Instructions:** 1. Attempt all questions. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. 0.1 (a) Explain the process of recovery, recrystallization and grain growth after cold 07 working. Discuss the residual stresses in metal working processes. **(b)** 07 0.2 **07** List sheet metal working operations and briefly discuss deep drawing and blanking. What is meant by extrusion? Explain different types of extrusion process and role of 07 **(b)** lubricant. OR (b) Classify different metal working processes and differentiate between the processes **07** based on temperature. **Q.3** What are different rolling variables? Discuss them. **07** (a) List the factors that determine temperature of work-piece in metal working and get 07 **(b)** equation for it. OR Write note on electric discharge forming and optical pyrometer. 0.3 (a) 07 Derive equation for total extrusion force using extrusion process analysis. 07 **(b)** Discuss rolling defect with their causes and remedies. 0.4 (a) **07** Enlist forging defects and give their causes and remedies. **(b)** 07 OR 07 0.4 Write note on workability of metal. (a) Define forging and compare open die and close die forging. Explain different **07 (b)** forging operations with neat sketch. 0.5 (a) What do you mean by rolling? Explain rolling mill with neat sketch. **07** List variables and defects in wire drawing and discuss them in brief. **07 (b)** OR In terms of rolling explain following: Bloom, Billet, Slab, Plate, Sheet, Strip and Q.5 (a) 07 Angle of Bite. Derive equation for forging load by plane strain forging analysis. 07
