

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VIII (old) - EXAMINATION – SUMMER 2018

Subject Code:182101

Date:02/05/2018

Subject Name:Metal Working Processes

Time:10:30 AM to 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 different metal working processes and differentiate between the processes based on temperature. **07**
(b) In terms of rolling explain following: Bloom, Billet, Slab, Plate, Sheet, Strip and Angle of Bite. **07**
- Q.2** (a) Write note on workability of metal. **07**
(b) What is meant by extrusion? Explain different types of extrusion process and role of lubricant. **07**
- OR**
- (b) Discuss recovery, recrystallization and grain growth after cold working. **07**
- Q.3** (a) Discuss defects rolling process with their causes and remedies. **07**
(b) Enlist forging defects and give their causes and remedies. **07**
- OR**
- Q.3** (a) Write note on optical pyrometer. **07**
(b) Derive equation for total extrusion force using extrusion process analysis. **07**
- Q.4** (a) What do you mean by rolling? With neat sketch explain different rolling mill. **07**
(b) What are variables and defects in wire drawing? Discuss them in brief. **07**
- OR**
- Q.4** (a) List sheet metal working operations and briefly discuss deep drawing and blanking. **07**
(b) Define forging and compare open die and close die forging. Explain different forging operations with neat sketch. **07**
- Q.5** (a) What are different rolling process variables? Discuss them. **07**
(b) List the factors that determine temperature of work-piece in metal working and get equation for it. **07**
- OR**
- Q.5** (a) Discuss the residual stresses in metal working processes. **07**
(b) Derive forging load equation by plane strain forging analysis. **07**
