

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-VIII • EXAMINATION – WINTER • 2014**

**Subject Code: 182101****Date: 04-12-2014****Subject Name: Metal Working Processes****Time: 02:30 pm - 05:00 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) Depending on temperature classify and differentiate metal working processes. **07**  
 (b) Briefly explain recovery and recrystallization for annealed cold worked metal. **07**
- Q.2** (a) List forging operation with neat sketch. **07**  
 (b) What are different forging processes? Differentiate between them. **07**
- OR**
- (b) Write note on High energy rate forming. **07**
- Q.3** (a) With neat sketch explain different types of rolling mills. **07**  
 (b) List any three forging defects and give their causes and remedies. **07**
- OR**
- Q.3** (a) Classify and differentiate between different extrusion processes. **07**  
 (b) List Rolling defects and with suitable sketch give causes and remedies of any three. **07**
- Q.4** (a) By using uniform deformation energy concept derive equation for calculating total extrusion pressure. **07**  
 (b) Using Plane strain forging analysis derive equation for total forging load (P). **07**
- OR**
- Q.4** (a) Give functions of flash in forging and differentiate between close and open die forging. **07**  
 (b) Discuss the effects of rolling variables on rolling pressure. **07**
- Q.5** (a) Discuss variables and defects in wire drawing. **07**  
 (b) Write note on residual stresses. **07**
- OR**
- Q.5** (a) Write note on thermocouple. **07**  
 (b) Explain following sheet metal working processes: i. Shearing ii. Deep drawing **07**

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