

GUJARAT TECHNOLOGICAL UNIVERSITY**Diploma Semester -III Regular / Remedial Examination December - 2010****Subject code: 335502****Subject Name: Materials & Metallurgy****Date: 28 /12 /2010****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.
4. English version is Authentic

- Q.1** (a) Draw any SEVEN commercial forms of metal and write its IS number and application **07**
 (b) List different properties of engineering materials & Explain technological properties **07**
- Q.2** (a) Define the “steel”. Classify & explain different types of steel. **07**
 (b) Explain effect of different alloying element on properties of steel **07**
OR
 (b) Explain material test certificate with reference to ASME code **07**
- Q.3** (a) Compare ferrous metal & non-ferrous metals **07**
 (b) Explain characteristics & application of aluminum & List its alloys **07**
OR
- Q.3** (a) Explain important properties & application of titanium. **07**
 (b) Explain properties, application & types of glass. **07**
- Q.4** (a) Explain properties & application of Teflon. **07**
 (b) Explain metallurgical microscope with neat sketch **07**
OR
- Q. 4** (a) Explain TTT diagram with neat sketch. **07**
 (b) Explain IC diagram & three reaction observed in it with neat sketch. **07**
- Q.5** (a) Define the term “heat treatment” and justify need of different heat treatment process in fabrication and welding **07**
 (b) Compare the following heat treatment process **07**
 1) Annealing and normalizing
 2) Mar tempering and austempering
OR
- Q.5** (a) Explain following terms briefly **07**
 a. Fatigue
 b. Fatigue Limit
 c. Creep
 d. Fracture
 e. Age hardening
 f. Strain aging
 g. Strain hardening
 (b) Write full form of ASME, ASTM ,EN ,BIS, AISI, SAE, API **07**
