

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA ENGG.- IIIrd SEMESTER-EXAMINATION – MAY/JUNE- 2012

Subject code: 335502

Date: 29/05/2012

Subject Name: Materials & Metallurgy

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.
4. English version is considered to be Authentic

- Q.1** **14**
- (a) Explain importance of materials & metallurgy in fabrication industry.
- (b) Draw any five commercial forms of metal and write its IS number and application.
- Q.2**
- (a) Explain factors affecting the selection of material **07**
- (b) Classify ferrous material. Explain Properties of Pig iron. **07**
- OR**
- (b) What is stainless steel ? Classify different types of S.S. and explain chemical composition, properties & application of any Two. **07**
- Q.3**
- (a) State the effect of following alloying elements on properties of steel. **07**
(A) Carbon (2) Silicon (3) Chromium (4) Nickel (5) Manganese
(6) Copper (7) Vanadium
- (b) Explain materials test certificate with suitable example. **07**
- OR**
- Q.3** (a) Explain characteristics & Application of copper. **07**
- (b) Define the term creep and explain creep curve **07**
- Q.4**
- (a) Define annealing process. explain purpose of annealing purpose **07**
- (b) Explain properties & application of elastomers (rubber) **07**
- OR**
- Q.4** (a) Explain properties & application of plastic **07**
- (b) Explain metallurgical microscope with neat sketch. **07**
- Q.5**
- (a) Explain SC, BCC, FCC, and HCP crystal structure. **07**
- (b) Differentiate **07**
(1) SA 515 GR 60 and SA 516 GR 70
(2) SS 304 and SS 316 (3) SS 316 and SS 316L
(4) SS 304 and SS 321 (5) SS 304 and SS 347
- OR**
- Q.5** (a) Draw Iron carbon diagram and write equation of three reactions. **07**
- (b) Explain TTT diagram with neat sketch. **07**
