

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma Engineering Sem. - V - Examination – June- 2011

Subject code: 355503

Subject Name: Welding Metallurgy

Date: 22/06/2011

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 Authentic

- Q.1** (a) Define the term “Weldability” and state the importance of weldability in a fabrication industry. **07**
- (b) Draw neat sketch of Iron –Carbon Equilibrium diagram and label the phases therein. **07**
- Q.2** (a) Explain briefly the factors affecting weldability of materials. **07**
- (b) Explain briefly the effect of grain size on mechanical properties of materials. **07**
- OR**
- (b) Explain briefly the Gas-Metal reactions in welding of carbon steel. **07**
- Q.3** (a) State the causes and remedies of Hydrogen Induced cracks. **07**
- (b) Differentiate between materials SS-304 and SS-316. **07**
- OR**
- Q.3** (a) Draw neat sketch of Time-Temperature-Transformation (TTT) diagram and label its phases. **07**
- (b) State the role of sigma phase and delta ferrite in SS-316. **07**
- Q.4** (a) Describe the procedural steps to weld cast iron with MMAW **07**
- (b) State the types of Cast-Iron and discuss the weldability of cast iron. **07**
- OR**
- Q.4** (a) Why Titanium welding needs high precautions during welding? **07**
- (b) State the types of Aluminium alloys and discuss the weldability of Aluminium. **07**
- Q.5** (a) Explain with suitable example shop plan and weld plan **07**
- (b) Discuss the problems and remedies of welding of dissimilar metals such as SS-304 and SA-515 Gr.-60. **07**
- OR**
- Q.5** (a) Explain with neat sketches different types of weld defects and its remedies **07**
- (b) Write brief note on Narrow groove welding **07**
