Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI • EXAMINATION - SUMMER 2013

Subject Code: 162502 Date: 27-05-2013 **Subject Name: Welding Technology** 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. Q.1 (a) Define welding. State its advantages and limitations compared to riveting 07 and bolting processes. (b) Explain the Gas Tungsten Arc Welding (GTAW) process with sketch. 07 State its advantages and limitations. 0.2 (a) State various types of weld defects. Explain causes and remedies for any 4 07 of them. **(b)** Explain leftward and rightward techniques of Gas welding. **07 (b)** Which are the sources of power in arc welding? Explain them briefly. 07 Q.3(a) Describe the welding cycle in resistance spot welding process. 07 (b) Describe friction welding. State its applications, advantages and 07 limitations. OR (a) Explain the principle and working of seam welding with a neat sketch. 07 0.3 What is pre-weld and post-weld heat-treatment? Why are they in the 07 course of? (a) What is heat affected zone (HAZ)? How does it occur? How it can be 07 **Q.4** removed? (b) Explain Submerged Arc Welding (SAW) with a sketch. State its 07 advantages and limitations. OR 0.4 (a) What do you understand by Non-Destructive Testing (NDT)? Explain 07 Magnetic Particle Test (MPT) for weld-bead with its limitations. (b) Draw sketch for any 4 types of weld joints. State the applications of all of 07 **Q.4** them. 0.5 (a) State the functions of electrode in Manual Metal Arc Welding (MMAW) 07 process. Differentiate between consumable and non-consumable electrode. **(b)** Which are the different types of flames in Oxy-Acetylene Welding **07** process? Explain them with sketch. OR Explain Flux Cored Arc Welding (FCAW) process with sketch. Draw the 07 0.5 cross section of electrode used in this process. **(b)** Write a short note on coding of electrodes as per American system. 07
