Seat No.:	Enrolment No
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GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma Engineering - SEMESTER – V • EXAMINATION – WINTER 2012

Date: 27/12/2012

Subject code: 355503

•		ne: Welding Metallurgy am - 01.00 pm Total Marks:	70
Insti	 Ma Fig 	empt any five questions. ke suitable assumptions wherever necessary. ures to the right indicate full marks. glish version is considered to be Authentic.	
Q.1	(a) (b)	Draw neat sketch of Iron Carbon Diagram & correlate in the field of welding metallurgy. Define the term "Weld ability" and state the importance of weld ability in a fabrication industry.	07 07
Q.2	(a) (b)	Explain briefly the Gas-Metal reactions in welding of carbon steel. Explain briefly the factors affecting weld ability of materials.	07 07
	(b)	OR Draw neat sketch of Time-Temperature-Transformation (TTT) diagram label its parts and explain briefly.	07
Q.3	(a) (b)	State the causes and remedies of Hydrogen- induced cracking. Give classification of stainless steel & explain role of schaffler & Delong diagram.	07 07
Q.3	(a) (b)	OR Explain briefly causes and remedies of IGC in SS 316. Differentiate between materials SS-304 and SS-316.	07 07
Q.4	(a) (b)	Why Titanium welding needs high precautions during welding? State the effect of alloying elements properties of carbon steel. OR	07 07
Q. 4	(a) (b)	State the types of Cast- Iron and discuss the weld ability of cast iron. Define the term essential variable, non essential variable, supplementary essential variable, WPS, WPQ, PQR & P- number.	07 07
Q.5	(a)	Prepare WPS with following data Material = SA 515 GR 70, Position = 1G, Electrode = E 7018 Welding Process = SMAW	07
	(b)	Discuss the problems and remedies of welding of dissimilar metals such as SS-304 and SA-515 Gr60.	07
Q.5	(a) (b)	State the types of Aluminum alloys and discuss the weld ability of Aluminum. What do you understand by the term "Post weld "Heat treatment as	07 07
	• •	UCS-56 of ASMF Sec-VIII Div 1	
