Sea	it No.:	Enrolment No	_
1	OIPLO	GUJARAT TECHNOLOGICAL UNIVERSITY MA ENGINEERING - SEMESTER-V • EXAMINATION – WINTER 2013	}
Su	bject	Code: 355503 Date: 03-12-2013	
Ti	_	Name: Welding Metallurgy 2:30 pm - 05:00 pm Total Marks: 70	
IIIS		Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. English version is considered to be Authentic.	
Q.1	(a) (b)	Write limitation IC diagram. Explain TTT diagram with neat sketch. Explain gas metal reaction with neat sketch.	07 07
Q.2	(a)	Explain different zones of weld joint with neat sketch and correlate it with IC diagram.	07
	(b)	Explain following terms briefly. 1) Resistance to cleavage. 2) Micro alloyed weld metal. 3) Resistance to micro void coalescence.	07
	(b)	OR State characteristics of good welding engineer for welding metallurgy department.	07
Q.3	(a) (b)	Explain welding arc with neat sketch. Explain cold cracking or hydrogen assisted cracking in welding.	07 07
	(-)	OR	
Q.3	(a)	Explain effect of electrode polarity and magnetic field on welding with neat sketch.	07
	(b)	Explain effect of various alloying elements on the strength of weld metal	07
Q.4	(a)	Prepare WPS from following data (GTAW) 1. Design code: ASME section VIII Div.1 2. Specification standard: ASME section IX 3. Base metal: 25 mm thick SA 240 TP 304 4. Welding process: GTAW 5. Joint Design: Double "V" 6. Filler metal: AWS ER-308-15 SFA 5.9 DIA 1.2 mm	07

Explain different welding consideration in dissimilar metal welding.

Explain weld ability consideration of austenitic stainless steel.

stainless steel and explain any one process with neat sketch.

Explain welding characteristics of aluminium and its alloy

What is weld distortion? Explain different types of distortion.

Explain requirement of before welding and after welding cleaning in welding

Prepare list of different processes used for welding of ferrite and martensite

Prepare list of different processes used for welding of gray cast iron. Explain

7. PWHT:NIL

oxy-acetylene welding technique.

of stainless steel

(b)

(a)

(b)

(a)

(b)

(a)

(b)

Q. 4

Q.5

Q.5

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