Seat No.:	Enrolment No.
Seat 110	Emoment 110.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER - VI (NEW).EXAMINATION - WINTER 2016

Date: 26/10/2016

Subject Code: 2162109

S	ubje	ect Name: Metal Joining Processes	
		: 02:30 PM to 05:00 PM Total Marks: 7	' 0
11	nstrue	 Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. 	
Q.1	(a)	Define welding. Discuss the factors which are considered in choosing a Welding process for a specific application.	02+05
	(b)	Explain the following terms with respect to characteristics of Welding Power Sources. a. Open circuit voltage (OCV). b. Power factor (pf) c. Static characteristics d. Dynamic characteristics. e. Current rating and duty cycle	07
Q.2	(a)	What is Arc welding? Explain MIG/MAG with neat sketch	02+05
V. 2	(b)	Explain with schematic different mode of metal transfer in arc welding processes.	07
		OR	
	(b)	Explain the phenomena for the formation of porosity and inclusions in weld metal also suggest the necessary precautions for the same.	04+03
Q.3	(a)	Explain with reason which arc characteristics should be used for the following welding Process.(CC, CV, Self-regulating Arc):- a. MMA & TIG b. MIG, SAW & PAW	07
	(b)	Briefly discuss how residual stresses and distortion occur in welded Structures? How this stress could be minimized and eliminated? OR	04+03
Q.3	(a)	Write short note on Flux cored electrode wire & its functions.	03+04
	(b)	Role of preheating and post heating on metallurgy of weldments	07
Q.4	(a)	List various Mechanical Tastings of welded joint. Explain any TWO in detail with neat schematic. Also mention their acceptance criteria as per ASME Sec IX. Code.	02+05
	(b)	Explain the basic principle of Brazing & Soldering & List the different Soldering & Brazing alloys.	07
		OR	
Q.4	(a)	Explain the effect of oxygen, Hydrogen & Nitrogen gases on quality of the welded joint.	07
	(b)	What is weldability? Discuss about weldability issue of Stainless steels	02+05
Q.5	(a) (b)	Explain the significance of WPS & PQR in welding Industries. Write short note on Frictional Stir welding, its operation & process parameters.	07 07
		OR	
Q.5	(a)	Write a note on: - 1. Contact resistance welding 2. Spot resistance welding 3. Seam projection welding.	07
	(b)	List the common welding defects & explain in detail any TWO with preventive method.	03+04
