Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE SEMESTER– 7th EXAMINATION – SUMMER 2015

Subject Code: 172103 **Date: 12/05/2015**

Subject Name: Metal Joining Processes

Time: 02.30PM-05.00PM **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)**	Classify welding and allied processes? Discuss importance of welding process over other fabrication processes.	**07**
	(b)	Explain different joint design and edge preparation used in welding process with neat sketch.	**07**
Q.2	**(a)**	Which are the equipments needed for shield-metal arc welding? Explain the function of the flux coating on the electrodes?	**07**
	(b)	Write on forces affecting in metal transfer with respect to welding process.	**07**
		OR	
	(b)	Write on parameters which affect metal transfer.	**07**
Q.3	**(a)**	Explain the principle of laser beam welding with a neat diagram.	**07**
	(b)	Discuss Tungsten Inert Gas welding process in detail.	**07**
		OR	
Q.3	**(a)**	How plasma welding process is used in industry? Which are the merits & de-merits of plasma welding?	**07**
	(b)	Compare among SMAW, SAW, GMAW and GTAW processes.	**07**
Q.4	**(a)**	Differentiate between brazing & soldering. Which are the various filler metals & fluxes used in brazing?	**07**
	(b)	Explain the process of MIG welding. List the metals which can be welded by MIG?	**07**
		OR	
Q.4	**(a)**	List the types of resistance welding. Differentiate resistance butt and flash butt welding.	**07**
	(b)	Why vacuum chamber is used in Electron Beam Welding? Which are the power sources required for electron beam welding.	**07**
Q.5	**(a)**	Define the term “weldability”? How “weldability” is tested?	**07**
	(b)	Explain the phenomena of weld cracking.	**07**
		OR	
Q.5	**(a)**	Discuss common defects in welding with their causes and remedies.	**07**
	(b)	Discuss the roll of main variables in welding process? Which tests would you perform to assure the quality of weld?	**07**

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