Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER II (OLD) – • EXAMINATION – SUMMER 2016

Subject Code: 1720808 **Date:20/05/2016**

Subject Name: Manufacturing Processes and Analysis

Time:10:30 am to 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)**	Classify the metal forming processes and explain the Tresca's maximum shear stress criterion.	**07**
	(b)	Draw the sketches of methods commonly use to prevent roll bending in rolling mills.	**07**
Q.2	**(a)**	Discuss the general design considerations for casting	**07**
	(b)	Write the short note on continuous casting process.	**07**
		OR	
	(b)	Write the short note on Vacuum casting process.	**07**
Q.3	**(a)**	Discuss the thermal effects of the welding process upon the structure and properties of the base metal.	**07**
	(b)	Explain the metal spinning operation and write its applications.	**07**
		OR	
Q.3	**(a)**	What do you mean by residual stress? Discuss about the sources of residual stresses.	**07**
	(b)	What do you mean by micro-machining? Enlist its applications.	**07**
Q.4	**(a)**	Write the mechanism, transfer medium, immediate source of energy and applications of EDM process?	**07**
	(b)	What are the process control parameters of laser machining process? Explain the effect of any two parameters on material removal rate in the process.	**07**
		OR	
Q.4	**(a)**	Write the mechanism, transfer medium, immediate source of energy and applications of abrasive jet machining (AJM) process?	**07**
	(b)	What are the process control parameters of ultrasonic machining (USM)? Explain the effect of any two parameters on material removal rate in the process.	**07**
Q.5	**(a)**	Write the difference between virtual reality and augmented reality? List the devices used for both.	**07**
	(b)	Write the short note on stereo-lithography process with suitable applications.	**07**
		OR	
Q.5	**(a)**	Enlist the advantages of reverse engineering.	**07**
	(b)	Write the short note on ballistic particle manufacturing process with suitable applications.	**07**

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