Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
ME – SEMESTER – I (New)– EXAMINATION – WINTER-2019

Subject Code: 3710807   **Date: 06-01-2020**

Subject Name: Advanced Materials Processing Techniques

Time: 02:30 PM TO 05:00 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)**	Explain the material removal process in EDM. How the die sinking EDM defer from EDM process?	**07**
	(b)	"The non-conventional processes are more appropriate as an advanced material processing techniques compare to conventional processes". Justify through suitable example in brief.	**07**
Q.2	**(a)**	Discuss any one material removal model of advanced fine finishing process.	**07**
	(b)	Explain the principle of ultrasonic machining. Why it is not suitable for ductile material?	**07**
		OR	
	(b)	Write the criteria of tool design for any one non-traditional machining process.	**07**
Q.3	**(a)**	Write the short note on metallization.	**07**
	(b)	Explain the working principle of magneto rheological abrasive finishing process with sketch.	**07**
		OR	
Q.3	**(a)**	What do you mean by high energy rate forming techniques? Describe any one.	**07**
	(b)	Write the difference between hot and cold isostatic pressing.	**07**
Q.4	**(a)**	Enlist the process parameters of magnetic pulse forming and discuss their effect.	**07**
	(b)	Write the short note on micro-drilling.	**07**
		OR	
Q.4	**(a)**	Enlist the various types of laser use in macro-manufacturing and micro-manufacturing.	**07**
	(b)	Write the short note on electro hydraulic forming process.	**07**
Q.5	**(a)**	Write the short note on ion implantation technique used for fabrication of micro-devices.	**07**
	(b)	Write the industrial applications of laser.	**07**
		OR	
Q.5	**(a)**	Explain the principles of laser material removal with sketch.	**07**
	(b)	Explain the working principle and applications of LIGA process.	**07**

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1