Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER– II (Old course)• REMEDIAL EXAMINATION – SUMMER 2015

Subject Code: 1720810 **Date:16/05/2015**

Subject Name: Modern Machining Methods

Time: 02:30 pm to 5:00 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)**	Why the unconventional machining methods are called so? When are they recommended?	**07**
	(b)	What is the principle of water jet machining? Discuss major parameters involved in WJM.	**07**
Q.2	**(a)**	Enlist the major parameters of abrasive jet machining and discuss the effect of any three on working accuracy and MRR.	**07**
	(b)	Explain with schematic diagram the process principle of USM and derive the expression for MRR.	**07**
		OR	
	(b)	Discuss the various process parameters which affect MRR in ultrasonic machining.	**07**
Q.3	**(a)**	Classify different EDM processes. Explain with schematic diagram the process principle of dry EDM.	**07**
	(b)	Derive the formula for MRR considering R-C relaxation circuit for sinking EDM.	**07**
		OR	
Q.3	**(a)**	What is dielectric used in EDM? Discuss various methods of dielectric flushing in EDM.	**07**
	(b)	Discuss the effect of different process parameters on tool wear rate and MRR for sinking EDM.	**07**
Q.4	**(a)**	Explain the process principle of ECM and derive formula for material removed per unit charge.	**07**
	(b)	Discuss the effect of current density, gap voltage, feed rate and electrolyte properties on surface accuracy in ECM.	**07**
		OR	
Q.4	**(a)**	What is electrolyte? How will you select the same for ECM? Discuss merits and demerits of some known electrolytes.	**07**
	(b)	Differentiate between ECM and ECG. State applications of both processes.	**07**
Q.5	**(a)**	What is Laser? Discuss the major properties of laser that makes it different from conventional light.	**07**
	(b)	Discuss the mechanics of material removal in LBM.	**07**
		OR	
Q.5	**(a)**	Differentiate between LBM and EBM.	**07**
	(b)	What is Plasma? Explain the process principle, accuracy and surface quality of plasma arc machining.	**07**

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