Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E –IIst SEMESTER–EXAMINATION – JULY- 2012

Subject code: 1720810 **Date: 14/07/2012**

Subject Name: Modern Machining Methods

Time: 10:30 am – 13:00 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)**	What are differences between conventional and unconventional machining? When would you recommend unconventional machining?	**07**
	(b)	What is the principle of water jet machining? Explain equipments used in WJM setup.	**07**
Q.2	**(a)**	Discuss the parametric effect on working accuracy and MRR in AJM.	**07**
	(b)	Discuss effect of amplitude and frequency of vibration, abrasive grit size and static load on MRR and surface finish in USM.	**07**
		OR	
	(b)	Explain the magneto-strictor transducer and mechanical amplifier used in USM	**07**
Q.3	**(a)**	Explain with schematic diagram the process principle of EDM.	**07**
	(b)	Derive the formula for MRR considering R-C relaxation circuit for EDM.	**07**
		OR	
Q.3	**(a)**	Discuss various methods of dielectric flushing in EDM.	**07**
	(b)	What is WEDM process? How it defers from EDM? Enlist its major applications.	**07**
Q.4	**(a)**	Explain the process principle of ECM and discuss apparatus and accessories used in process.	**07**
	(b)	What are the applications and limitations of ECM?	**07**
		OR	
Q.4	**(a)**	Discuss the effect of current density, gap voltage, Feed rate and electrolyte properties on accuracy in ECM.	**07**
	(b)	Explain with schematic diagram the process principle of ECG.	**07**
Q.5	**(a)**	Explain laser machining with schematic diagram.	**07**
	(b)	Discuss material removal mechanism in LBM with sketch.	**07**
		OR	
Q.5	**(a)**	Discuss the EBM process with neat sketch. Also state its major applications.	**07**
	(b)	Explain the process principle of PAM. Also discuss accuracy and surface quality obtained.	**07**

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