Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Sem-I Remedial Examination January/ February 2011

Subject code: 710706
Subject Name: Energy Management

Date: 04 /02 /2011 **Time: 02.30 pm – 05.00 pm**
Total Marks: 60

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Describe the various methods by which you can calculate motor loading.	**06**
	(b)	Which information is required to evaluate energy saving for variable speed application?	**06**
Q.2	**(a)**	What is the principle of energy management? Why managerial skills are important as technical skills in energy management?	**06**
	(b)	Explain demand side management.	**06**
		OR	
	(b)	Distinguish between preliminary energy audit and detailed energy audit.	**06**
Q.3	**(a)**	What are the advantages of energy efficient motors?	**06**
	(b)	Explain how maximum demand controllers work?	**06**
		OR	
Q.3	**(a)**	Explain how an energy efficient induction motor is designed. A 20KW rated motor is drawing actual measured power of 14KW if rated efficiency is 92% determine the motor loading.	**06**
	(b)	Explain ROI, IRR cost evaluation by payback terms.	**06**
Q.4	**(a)**	Explain how power factor improvement affects saving of energy.	**06**
	(b)	Discuss the points of energy saving in building.	**06**
		OR	
Q.4	**(a)**	Where does co-generation find its applications?	**06**
	(b)	What is the difference in quality power and reliable power?	**06**
Q.5	**(a)**	List the factors that affect energy efficiency in air compressor.	**06**
	(b)	List down energy conservation opportunities in pumping system.	**06**
		OR	
Q.5	**(a)**	Enlist the factors affecting cooling tower performance. Explain it.	**06**
	(b)	Define volumetric efficiency, isothermal power, isothermal efficiency and specific power requirement.	**06**

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