Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. SEMESTER I (old course)–EXAMINATION (Remedial) – WINTER 2015

Subject code: 710706N **Date: 14/12/2015**

Subject Name: Energy Management

Time: 10:30 AM to 1:00 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 various types of losses occurring in electrical motor. Also suggest remedies to minimize each loss in brief.	**07**
	(b)	Define power factor. List advantages of better power factor. Explain any one method to improve power factor used in industries.	**07**
Q.2	**(a)**	Write short note on maximum demand controller and its role in any industry.	**07**
	(b)	Explain the significance of Energy cost. Support your answer with suitable example.	**07**
		OR	
	(b)	Write a short note on soft starter. List and explain its advantages over other conventional starters also.	**07**
Q.3	**(a)**	ñVariable torque loads offer greatest energy savings than constant load torque applicationò. Justify your answer with appropriate arguments.	**07**
	(b)	Explain following terms: (i) Luminaire (iii) Colour Rendering Index (ii) Luminous Efficacy	**07**
		OR	
Q.3	**(a)**	Explain at least five practices for energy efficient lighting.	**07**
	(b)	In context to efficient pumping system operation, explain the following: (i) Effect of speed variation (ii) Effects of impeller diameter change	**07**
Q.4	**(a)**	Explain following terms with suitable example: (i) Simple Pay Back Period (ii) Internal Rate of Return	**07**
	(b)	Explain what Power System Security is.	**07**
		OR	
Q.4	**(a)**	Define energy management. Explain different objectives of energy management.	**07**
	(b)	Explain the role of Demand side Management (DSM) in detail.	**07**
Q.5	**(a)**	Prepare a technical report of energy audit of any process industry/ commercial complex you visited.	**07**
	(b)	List various instrument used in energy audit. Explain any two in detail.	**07**
		OR	
Q.5	**(a)**	Explain how cogeneration is advantageous over conventional power Plant. List the condition under which cogeneration will become feasible.	**07**
	(b)	Name three factors affecting the boiler efficiency and explain briefly.	**07**

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