GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VII(NEW) • EXAMINATION – WINTER 2016

Subject Code:2170911   **Date:18/11/2016**
Subject Name:Energy Conservation, and Audit(Departmental Elective - II)
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)**	What is energy security and what is Indian government strategy for future to meet energy security.	**07**
	(b)	Why energy conservation act is framed? Explain the words 'standards and labeling', 'Designated consumers' and 'BEE' with respect to this act.	**07**
Q.2	**(a)**	Classify the energy audit & Explain the three phases of detailed energy audit.	**07**
	(b)	Define: Power factor, Load factor, Time of Day Tariff, Contract Demand, Specific Heat, Latent Heat of Fusion, Humidity.	**07**
		OR	
	(b)	Explain various energy audit instruments.	**07**
Q.3	**(a)**	How to improve power factor and what are the impacts of improved power factor in electrical systems.	**07**
	(b)	List and explain factors which influence the thermal performance of the building from energy management point of view.	**07**
		OR	
Q.3	**(a)**	Discuss the effect of following parameters on the performance of Boiler 1) Excess air 2) Blow down 3) Waste heat utilization	**07**
	(b)	Explain Indirect method of Energy Efficiency calculation for Furnace.	**07**
Q.4	**(a)**	How do you assess the performance of Fans? Explain.	**07**
	(b)	List down energy conservation opportunities in pumping system.	**07**
		OR	
Q.4	**(a)**	Explain energy efficient motors and also explain technical aspects of energy efficient motors.	**07**
	(b)	How to make lighting system of your college campus more efficient?	**07**
Q.5	**(a)**	Give various tips for energy savings in thermal utility devices like compressor, pump and refrigeration system.	**07**
	(b)	What is cogeneration? Enlist four types of topping cycle cogeneration and discuss one with neat sketch.	**07**
		OR	
Q.5	**(a)**	Write components of Cooling Tower and explain briefly?	**07**
	(b)	Classify heat recovery systems and explain any one in detail.	**07**

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