Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2014

Subject code: 1722104 **Date: 25-06-2014**

Subject Name: Energy Conservation and Management

Time: 02:30 pm - 05:00 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 the role of Energy Scenario ? Briefly explain óIndian energy scenarioô	**07**
	(b)	Define the term óEnergy Managementô. Write Signficance and role of Energy management.	**07**
Q.2	**(a)**	What do you mean by Energy conservation? Discuss its principles and importance.	**07**
	(b)	What is Energy audit ? Discuss Types of Energy audit.	**07**
		OR	
	(b)	Define the terms Power factor and Load factor. How is annual heating and cooling load factors calculated ?	**07**
Q.3	**(a)**	Discuss with flow diagram Hydro power plant. State its advantages over steam power plant.	**07**
	(b)	What do you understand by pay back period and Internal rate of return ? A co-generation plant installation is expected to reduce a companyôs annual energy bill by Rs.24 lakhs. If the capital cost of the new co-generation installation is Rs.95 lakhs and the annual maintenance and operating costs are Rs. 5 lakhs, What will be the expected pay back period for the project?	**07**
		OR	
Q.3	**(a)**	Discuss the factors influencing energy management program. How energy management is carried out in an Industry?	**08**
	(b)	List ten strategic measures for meeting the future energy requirements of India.	**06**
Q.4	**(a)**	Briefly explain Electricity saving techniques. State various energy efficient machines.	**08**
	(b)	Briefly discuss Energy conservation in Internal combustion engine.	**06**
		OR	
Q.4	**(a)**	What is Bio gas ? Draw and explain any one bio gas plant.	**08**
	(b)	Explain Green house concept.	**06**
Q.5	**(a)**	Why energy storage is required ? State the types of energy storage and explain any one.	**07**
	(b)	What do you mean by Cogeneration? Explain Gas turbine cogeneration plant.	**07**
		OR	
Q.5	**(a)**	Write note on (i) Back pressure turbine (ii) Wind power generation	**08**
	(b)	Discuss advantages and limitations of Solar energy.	**06**

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