Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER–VI (NEW) EXAMINATION – WINTER 2024

Subject Code:3161919 Date:05-12-2024

Subject Name: Energy Conservation and Management

Time:02:30 PM TO 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.**
4. **Simple and non-programmable scientific calculators are allowed.**

Q.1	**(a)**	Define i) Renewable Energy ii) Non-Renewable Energy iii) Per Capita energy consumption	**03**
	(b)	Briefly explain various schemes relating to Bureau of Energy Efficiency (BEE) for designated consumers, State designated agencies.	**04**
	(c)	Write short note on Energy Conservation Act-2001.	**07**
Q.2	**(a)**	Compare Net Present Value and Internal Rate of Return	**03**
	(b)	List benefits of Energy Monitoring and Targeting	**04**
	(c)	Answer the following questions in term of Energy Servicing Companies (ESCOs). 1) Types of Performance contract offered 2) Role and responsibilities 3) Limitation	**07**
		OR	
	(c)	Write note on 'Indian Energy scenario'	**07**
Q.3	**(a)**	Define Energy Management and state its objective.	**03**
	(b)	List factors affecting refrigeration and air conditioning system performance and explain any one from it.	**04**
	(c)	List out key instruments used for energy audit and explain their function.	**07**
		OR	
Q.3	**(a)**	List down the essential elements of monitoring and targeting System?	**03**
	(b)	Define the energy audit as per Energy Conservation Act 2001. List out the objectives of energy management.	**04**
	(c)	Distinguish between 'preliminary energy audit' and 'detailed energy audit'?	**07**
Q.4	**(a)**	Define Present value and Net present value	**03**
	(b)	Explain techniques of energy conservation in refrigerated cold storage plants.	**04**
	(c)	List application, advantages of Thermic fluid heaters and super critical boilers from energy conservation point of view.	**07**
		OR	
Q.4	**(a)**	Define the following terms: Dew Point temperature, HCV, Latent heat of fusion	**03**
	(b)	Compare topping cycle and bottoming cycle for cogeneration	**04**
	(c)	List application, advantages of Thermic fluid heaters and super critical boilers from energy conservation point of view.	**07**
Q.5	**(a)**	List the various key instruments for carrying out energy audit	**03**
	(b)	Give recommendation for efficient design of furnace.	**04**
	(c)	Explain in brief about Clean Development Mechanism.	**07**
		OR	
Q.5	**(a)**	Give tips for energy saving for future.	**03**
	(b)	Summarize the practices to be followed for proper steam trap installation.	**04**
	(c)	Explain Bachat Lamp Yojana, its aim and benefits.	**07**

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