Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER II (NEW) – • EXAMINATION – SUMMER 2016

Subject Code: 2721411 Date: 02/06/2016

Subject Name: Energy Management

Time:10:30 am to 01:00 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)**	Differentiate between the terms: 1. Energy efficiency and energy pricing 2. Energy conservation and energy management 3. Latent heat and sensible heat	**07**
	(b)	Briefly explain National energy production and utilization strategies.	**07**
Q.2	**(a)**	Write brief note on future scenario in India in context to emerging energy technologies.	**07**
	(b)	Derive an expression for power developed by wind, and expression for maximum power.	**07**
		OR	
	(b)	Describe with neat sketch the working of wind energy system with its main components.	**07**
Q.3	**(a)**	Write brief note on application of solar energy for agricultural and industrial process heat.	**07**
	(b)	Write brief note on hydrogen technology developments in India.	**07**
		OR	
Q.3	**(a)**	List advantages of fusion power and different parameters required to generate and maintain fusion reactors.	**07**
	(b)	Explain gas based thermal power generation technologies.	**07**
Q.4	**(a)**	Explain the following Solar photovoltaic system 1. Battery storage with invertor system 2. Grid connected system 3. Hybrid solar photovoltaic system	
	(b)	With neat sketch explain super-heated steam power generation system using geothermal energy.	**07**
		OR	
Q.4	**(a)**	Write short note on solar pond and methods of improving performance of solar pond.	**07**
	(b)	Briefly explain various regulation in energy management.	**07**
Q.5	**(a)**	Explain urban energy planning.	**07**
	(b)	List advantages of demand side energy management.	**07**
		OR	
Q.5	**(a)**	Briefly explain energy impact assessment prediction and analysis for low energy cost building design.	**07**
	(b)	Explain demand side energy management and energy codes for buildings.	**07**

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