Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY ME- SEMESTER II– EXAMINATION – SUMMER 2015

Subject Code: 2721411 Subject Name: Energy Management Time: 2:30 PM – 5:00 PM Instructions:

Total Marks: 70

Date: 03/06/2015

- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.

Q.1	(a)	Explain	the	following	terms:	Energy	pricing,	Energy	plantation,	Energy	07
		Consumption, Energy production.									

- (b) Describe the advantages and disadvantages of non conventional energy 07 sources. Also briefly explain the energy resources with reference to Indian context.
- Q.2 (a) A nuclear reactor for generating 1200MWe has an overall efficiency of 30 % 07 and a load factor of 70%. Calculate (a) thermal capacity of reactor (b) energy delivered per year in MW-h and MW-d.(c) amount of fuel consumed in 3 years if 1g of 0.72 % ²³⁵U generates 1MW-d (d) calculate fuel necessary if 3% enriched uranium is used for 3 years.
 - (b) Classify wind energy conversion systems. State advantages and disadvantages 07 of wind energy compared to solar energy.

OR

(b) Write short note on õMicro Hydel developmentsö

- 07
- Q.3 (a) With neat sketch explain layout of Diesel power plant and explain different 07 circuits.
 - (b) List measures for reducing power consumption of air conditioning and 07 ventilation system.

OR

- Q.3 (a) Diagnose problems encountered in lighting sector. How energy efficiency can 07 be achieved and measured for enhancing energy saving in lighting sector.
 (b) Explain role of energy manager in construction sector. 07
- Q.4 (a) Explain single basin and double basin tidal plant. State present status of tidal 07 power plant in India.
 - (b) Describe hydrogen oxygen fuel cell and reactions taking place at anode and 07 cathode and voltage generated. Discuss material aspects of fuel cell.

OR

- Q.4 (a) Explain construction and working of solar pond with neat sketch. 07
 - (b) Classify geothermal energy sources. List operational problems and their 07 remedies in geothermal plants.

Q.5 (a) With reference to demand side management, explain the following 07

- 1. Cost reduction and environmental motives
- 2. Reliability and network motives.
- (b) Explain need of energy planning; briefly discuss its importance in urban 07 planning.

Q.5	(a)	Explain the following				
		1. Energy requirements for sustainable construction sector.				
	(b)	2. Zero energy buildings Write short note on õImportance of energy in Rural planningö.	07			
	()	while short note on omportance of energy in rear plainings.	07			
