

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VII (Old) EXAMINATION – WINTER 2019****Subject Code: 171907****Date: 23/11/2019****Subject Name: Energy Conservation And 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) Define the following: 1. Time of day tariff 2. Power factor 3. Resistive load 4. Sensible heat gain 5. Calorific value 6. Relative humidity 7. Maximum demand **07**  
(b) Write about special features of Energy conservation act 2001. **07**
- Q.2** (a) Write sample energy audit report. **07**  
(b) What is Indian Energy scenario and what are the latest developments in this field? **07**
- OR**
- (b) Write a note on different phases of energy audit. **07**
- Q.3** (a) Define following terms: 1.Return on investment 2.Life cycle cost 3.Time value of money 4. Depreciation **07**  
(b) List major elements of monitoring and targeting and explain any four in detail **07**
- OR**
- Q.3** (a) What is star rating and labeling program? Which appliances are covered under this program? **07**  
(b) What is bench marking and how is it helpful in conducting energy audit? **07**
- Q.4** (a) Explain indirect method of efficiency evaluation for furnace **07**  
(b) Write a note on waste heat recovery steam generator **07**
- OR**
- Q.4** (a) How to select insulation? How to decide thickness of insulation? **07**  
(b) Discuss any four methods to increase energy efficiency of Boiler. **07**
- Q.5** (a) Classify different types of waste heat recovery methods and explain any one of them with necessary diagram **07**  
(b) Explain proper working practice for pumps used in industry. **07**
- OR**
- Q.5** (a) Give suggestions to reduce energy consumption in HVAC systems. **07**  
(b) What is cogeneration? When its use is viable? **07**

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