

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII • EXAMINATION – WINTER 2013****Subject Code: 171907****Date: 03-12-2013****Subject Name: Energy Conservation and Management****Time: 10:30 TO 01:00****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 & explain the following terms: **07**
(i) Power factor (ii) Relative humidity (iii) dew point temp.
- (b) Write short note on energy security. **07**
- Q.2** (a) Classify the energy audit & Explain the three phases of detailed energy audit. **07**
(b) Explain long term energy scenario for India. **07**
- OR**
- (b) Explain Simple pay back method with its advantage & limitation. **07**
- Q.3** (a) Discuss the role of energy service companies. (ESCOs) **07**
(b) Define Energy management. State the basic principles and benefits of energy management. **07**
- OR**
- Q.3** (a) Explain how CUSUM chart is drawn with an example. **07**
(b) Give various electricity saving techniques. **07**
- Q.4** (a) What do you mean by cogeneration? Classify cogeneration system & Explain bottoming cycle. **07**
(b) State key elements of Energy monitoring and targeting system. Also discuss its benefits. **07**
- OR**
- Q.4** (a) List the suggestions for improving the efficiency in compressed air system. **07**
(b) Give energy efficiency measures in boilers. **07**
- Q.5** (a) With a neat sketch explain Gas turbine co-generation plant. **07**
(b) Explain Sensitivity Analysis & List the micro & macro factors. **07**
- OR**
- Q.5** (a) Explain in brief Energy efficiency versus Energy conservation. Write step wise procedure to calculate Boiler efficiency. **07**
(b) Discuss the sources of waste heat and its potential applications. **07**
