

GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEMESTER-VII - EXAMINATION – SUMMER 2015

Subject Code: 171907**Date: 06/05/2015****Subject Name: Energy conservation and management****Time: 2:30 PM to 5:00 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) List various primary energy sources and explain energy scenario in India. **07**
(b) Define energy conservation. Mention its importance and explain energy conservation act 2001. **07**
- Q.2** (a) Define the following terms: (i) Humidity (ii) High grade energy (iii) Power factor (iv) Latent heat of fusion (v) Dew point (vi) Calorific value (vii) Load factor **07**
(b) What is energy audit? Explain detailed energy audit. **07**
- OR**
- (b) List the key instruments for energy audit & explain its function. **07**
- Q.3** (a) Explain the role of ESCO in detail. **07**
(b) Explain briefly the essential elements of monitoring and targeting system. **07**
- OR**
- Q.3** (a) Explain with example how a CUSUM chart is drawn. **07**
(b) Define the following terms: (i) SPP (ii) Present value of money (iii) ROI (iv) NPV (v) IRR (vi) Sensitivity analysis (vii) Risk analysis **07**
- Q.4** (a) Justify energy efficiency measures in the compressor. **07**
(b) Discuss the effect of climate change on environment in detail due to effect of various energy uses. **07**
- OR**
- Q.4** (a) Explain energy pricing in India. **07**
(b) Name three different factors affecting the boiler efficiency and explain briefly? **07**
- Q.5** (a) List various energy conservation opportunities in a refrigeration system. **07**
(b) With sketch explain gas turbine cogeneration plant. **07**
- OR**
- Q.5** (a) Mention the various source of waste heat recovery and its benefits. **07**
(b) Mention various techniques for electricity conservation. **07**
