

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**ME – SEMESTER IV (NEW) – • EXAMINATION – SUMMER 2016**

**Subject Code: 2742102**

**Date:04/05/2016**

**Subject Name: Energy Conservation & 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 energy conservation. Mention its importance and explain energy conservation act 2001. **07**  
(b) Define energy security. Enlist different strategies to achieve it and discuss role of energy conservation to achieve energy security. **07**
- Q.2** (a) Make comparison between Internal Rate of Return and Net Present Value method. **07**  
(b) Write short note on present worth analysis. **07**
- OR**
- (b) Explain method of calculating payback period. **07**
- Q.3** (a) Give energy saving measures in lighting systems. **07**  
(b) Give various tips for energy savings in thermal utility devices like compressor, pump and refrigeration system. **07**
- OR**
- Q.3** (a) Explain energy efficiency in steam boiler. **07**  
(b) Explain various methods to find the furnace efficiency. **07**
- Q.4** (a) Discuss the different methods to analyze the energy efficiency of electrical utilities. **07**  
(b) Explain method for estimation of annual heating and cooling loads for evaluation of thermal performance of a building. **07**
- OR**
- Q.4** (a) What is the role of an ESCO? Discuss it in detail. **07**  
(b) Discuss principles and need of energy management. **07**
- Q.5** (a) Write short note on clean development mechanism (CDM) with regard to KYOTO protocol. **07**  
(b) List the key instruments for energy audit & explain its function. **07**
- OR**
- Q.5** (a) Briefly discuss about KYOTO protocol. **07**  
(b) What is energy audit? Explain detailed energy audit. **07**

\*\*\*\*\*