

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI(NEW) EXAMINATION – WINTER 2022****Subject Code:3160916****Date:16-12-2022****Subject Name:Energy Conservation****Time:02:30 PM TO 05:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) Explain need of energy audit and management. **03**  
(b) Define energy management. Write down its objective. **04**  
(c) Explain energy management strategy. **07**
- Q.2** (a) Give the hot and cold applications of insulator. **03**  
(b) Write down Guidelines for writing energy audit report. **04**  
(c) Write a short note on automatic power factor controllers. **07**
- OR**
- (c) Explain energy saving in pumps & pumping systems. **07**
- Q.3** (a) What is energy efficient motor? How is it important? **03**  
(b) Explain variable speed drivers. **04**  
(c) Write a short note on soft starter. **07**
- OR**
- Q.3** (a) Demand side management (DSM) **03**  
(b) Explain harmonics & its improvements **04**  
(c) Explain method of power factor improvement. **07**
- Q.4** (a) Give the limitations of heat recovery. **03**  
(b) Write different between FBC and PFBC boilers. **04**  
(c) Give the types and classification of furnace. Explain any one in detail. **07**
- OR**
- Q.4** (a) Write down properties of steam utilization. **03**  
(b) What is the thermic fluid heater? Explain its need and application. **04**  
(c) Explain Flash steam recovery. **07**
- Q.5** (a) Give the type of pumps and its application. **03**  
(b) Give the different series & parallel operation of blower **04**  
(c) Write a short note on cooling tower. **07**
- OR**
- Q.5** (a) Give the types & application of blower. **03**  
(b) Explain the performance of parallel and series operating pump. **04**  
(c) Write a short note on compressors. **07**

\*\*\*\*\*