

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2018****Subject Code: 2170911****Date: 15/11/2018****Subject Name: Energy Conservation and Audit****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) What is Indian Boiler regulation? 03
(b) Explain impact of renewable energy on energy audit recommendations. 04
(c) Case studies of implemented energy cost optimization projects in electrical utilities as well as thermal utilities . 07
- Q.2** (a) Explain various energy audit instruments. 03
(b) Explain need of Energy Audit and Management. 04
(c) Explain General Principles of Energy Management. 07
- OR**
- Q.3** (c) Explain Instruments for Audit and Monitoring Energy and Energy Savings. 07
(a) Explain components of compressed air systems. 03
(b) Explain P.F. improvements in Electrical Power System. 04
(c) Explain Boilers- performance evaluation And Loss analysis. 07
- OR**
- Q.3** (a) Difference between fans, blowers and compressors? 03
(b) Describe Furnaces- Types and classifications. 04
(c) Explain Thermic Fluid heaters, need and applications. 07
- Q.4** (a) List down energy conservation opportunities in refrigeration system. 03
(b) Explain Transformers loss reductions And parallel operations. 04
(c) Explain Type of Pumps, Also Give Detail parallel and series operating pump performance 07
- OR**
- Q.4** (a) Discuss present energy consumption scenario of India. 03
(b) Explain integration of different systems in boiler operation 04
(c) Explain Boiler's limitations and constraints. 07
- Q.5** (a) Define: Time of Day Tariff, specific Heat and Humidity 03
(b) Explain Water treatment and its impact on boiler losses. 04
(c) Explain Bloomers (Blowers) types & application 07
- OR**
- Q.5** (a) Define: Latent Heat of Fusion, Contract Demand and Load factor 03
(b) Explain Compressed Air Systems Cooling towers, its types and performance assessment & limitations 04
(c) What is FBC and PFBC boilers & explain in detail 07
