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SUBJECT CODE NO:- E – 165
FACULTY OF ENGINEERING AND TECHNOLOGY
T.E.(EEP/EE/EEE) Examination Nov/Dec 2017
Energy Conservation & Audit
(REVISED)

[Time: Three Hours]

[Max.Marks:80]

Please check whether you have got the right question paper.

- N.B
- i. Q1 & Q6 are compulsory.
 - ii. Attempt any two from remaining questions from each section.

Section A

- Q.1 Solve any five. 10
- a) Define energy audit.
 - b) Mention the sources of Greenhouse gases.
 - c) State the types of energy audit.
 - d) Give the effects of ozone layer depletion.
 - e) What are applications of bottoming cycle?
 - f) What do you mean by designated consumers?
 - g) Which instruments are used to measure air velocity & air flow in duct?
 - h) Define ton of refrigeration.
- Q.2 07
- a) What is BEE? Explain its role in energy conservation.
 - b) Explain different types of measuring instruments used for energy Audit. 08
- Q.3 08
- a) What are the methods to calculate boiler efficiency? Explain any one in detail.
 - b) Explain energy efficiency opportunities in HVAC of refrigeration system. 07
- Q.4 07
- a) Explain waste heat recovery system in detail.
 - b) What is cogeneration? With the help of diagram explain extraction condensing turbine cogeneration system. 08
- Q.5 Write short notes on any three. 15
- a) CDM & its objectives.
 - b) Global warming
 - c) Energy manager
 - d) Energy conservation Act 2001.

Section B

- Q.6 Solve any five. 10
- a) What are the different methods of financial evaluation?
 - b) What is PI?
 - c) What is DSM?
 - d) What is power factor? Mention the needs to improve it.
 - e) What is meant by TOD – Tariff?
 - f) Define room index for light system.
 - g) Define harmonics.
 - h) How will you calculate discount factor?
- Q.7 a) Explain simple pay back period method. Also state its advantages & disadvantages. 07
b) Give comparison between NPV & IRR method of financial analysis for energy conservation projects. 08
- Q.8 a) Explain the important factors of the electricity Act 2003. 07
b) Explain working of maximum demand controller & APFC panel. 08
- Q.9 a) Explain in detail the procedure to carry out energy audit for steel plant. 08
b) Explain in detail the procedure to carry out energy audit for commercial establishment. 07
- Q.10 Write short notes on (any three) 15
- a) Soft starter
 - b) Electronic ballast.
 - c) Uncertainty & sensitivity analysis.
 - d) Electricity billing & load management.