Total No. of Printed Pages:02

SUBJECT CODE NO:- H-269
FACULTY OF SCIENCE AND TECHNOLOGY
T.E. (EEP/EE/EEE)
Energy Conservation & Audit
(OLD)

[Time: Three Hours] **[Max. Marks:80]**

Please check whether you have got the right question paper.

N.B i) Q.1 and Q.6 are compulsory.
ii) Attempt any two questions from remaining questions from each section.

Section A

Q.1 Solve any five 10

i. Define ton of refrigeration.
ii. State second law of thermodynamic.
iii. How to measure air velocity & air flow in a duct?
iv. What is evaporation ratio in case of steam boiler?
v. Draw schematic diagram for bottoming cycle of cogeneration.
vi. What is meant by global warming potential?
vii. Write the applications for bottoming cycle.
viii. Define energy Audit.

Q.2 a. Explain ten step methodologies for detailed energy audit. 08
b. Explain important features of energy conservation act 2001. 07

Q.3 a. List out energy conservation opportunities in boiler plant of TPS? 07
b. What is cogeneration? With the help of diagram explain back pressure turbine cogeneration system. 08

Q.4 a. Write the procedure to carry out energy audit of compressed air system. 07
b. Explain “affinity laws” applicable to pumping system. List energy conservation opportunities in pumping system in industry. 08

Q.5 Write note (any 3) 15

i. Energy performance assessment of HVAC & refrigeration system.
ii. Emission trading.
iii. KYoTo protocol.
iv. Role of renewable energy management of a nation.

Section B

Q.6 Solve any five 10

i. What are different methods of financial evaluation?
ii. What is PI?
iii. What is power factor? How to improve it.
iv. What is meant by TOD tariff?
v. What is OSM?
vi. Define room index for lighting systems.
vii. Define harmonics.
viii. List out energy efficient devices.

Q.7 a. Explain simple payback period mention its advantages and disadvantages. 08
b. Explain in detail importance of power factor in energy conservation program. 07

Q.8 a. Explain working of APFC Panel & energy efficient transformers. 08
b. Explain the terms:- IRR, PI of sensitivity analysis. 07

Q.9 c. Explain in detail the procedure carried out for energy audit for cement industry. 07
a. Explain the detailed procedure for carrying out energy audit for the textile industry. 08

Q.10 Write short notes on (any 3) 15

i. Soft starter.
ii. T&D losses, harmonics.
iii. Electricity act 2003.
iv. Energy efficient motors.