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**B.Tech. (Electrical Engineering) 8th Semester
(G-Scheme) Examination, July-2022
ENERGY MANAGEMENT AND AUDITING
Paper- OEC-EE-414-G**

Time allowed : 3 hours]

[Maximum marks : 75

Note : Attempt five questions in all, selecting one question from each unit. Question number 1 is compulsory. All Questions carry equal marks.

1. (a) What is meant by waste heat recovery? $3 \times 5 = 15$
(b) Define the term cogeneration.
(c) What are the direct and indirect benefit: of waste heat recovery?
(d) What are the two sources of feed water in a boiler system?
(e) What is meant by steam traps?

Unit-I

2. Define Energy Management. What are the objectives of energy management? 15
3. Explain any five energy management opportunities in lightning systems. 15

Unit-II

4. What are the different types of energy audit? Explain the steps involved in detailed energy audit. 15

5. (a) List down the major energy audits instruments and its use. 7.5
- (b) Differentiate between simple payback period and net present value method. 7.5

Unit-III

6. (a) What is meant by loading of motor? Why does the efficiency of motor reduce when it operates at lower loading? List down any 2 steps to improve the operating efficiency of under-loaded motors. 7.5
- (b) What are the energy management opportunities in electrolytic processes? 7.5
7. (a) Explain how setting a lower evaporator temperature helps in reducing the power consumption of an air conditioning system? List down any three-energy saving measures in domestic air conditioning system. 7.5
- (b) Explain motor efficiency management and process of motor performance management. 7.5

Unit-IV

8. Describe energy management in solar energy and wind energy. 15
9. What are different types of renewable energy sources. How energy can be managed based on government policies. 15