[Total No. of Questions - 9] [Total No. of Printed Pages - 3] (2125)

15178

B. Tech 5th Semester Examination

Energy Assessment and Auditing (NS)

EE-300(a)

Time : 3 Hours **Max. Marks : 100**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Candidates are required to attempt five questions in all selecting one question from each of the sections A, B, C & D of the question paper and all the subparts of the questions in section E. Use of non-programmable calculators is allowed.

SECTION - A

1. (a) What is principle of energy flow and energy conservation?

   (b) What is the significance of energy efficiency and demand side management? (2×10=20)

2. (a) What are the few important technical feasibility parameters that one should consider during analysis of energy conservation opportunities?

   (b) Explain in detail the difference between Energy Conservation and Energy efficiency and its relevance. (2×10=20)

SECTION - B

3. (a) Explain Quantitative Reviews and Qualitative Reviews while analyzing after conducting energy audit.

[P.T.O.]

   (b) What is an objective of the energy policy in an organization? List down the typical format of energy policy. (2×10=20)

4. (a) What are the elements of monitoring and targeting system? Explain how to draw moving annual total method. What is the inference of this method?

   (b) Cold Air at 25°C is supplied through a square duct to a air-conditioning building. The velocity and quantity of cold air flow are 2 m/s and 250 m^3/ hr. respectively. Find out the size of the square duct in mm. (2×10=20)

SECTION - C

5. (a) Discuss the various measuring instruments.

   (b) Temperature measuring instruments and their significance. (2×10=20)

6. (a) Explain the working of any two instruments used in measurement of heating.

   (b) Air conditioning system used in houses/ offices. (2×10=20)

SECTION - D

7. What is the significance of Government's role in energy conservation and energy efficiency? (20)

8. Explain the procedure of economical evaluation of energy conservation techniques. (20)

SECTION - E

9. Attempt all questions and each question carries one mark.

   (i) A three phase induction 75 kW motor operates at 55 kW. The measured voltage is 415 V, current is 80 amps. Calculate the power factor of the motor?

(ii) What are the different types of contracts involved in project management system?

(iii) What is the sensitivity analysis?

(iv) What are the elements of monitoring and targeting system?

(v) List down at-least three effects of acid rain.

(vi) Explain Net Prevent Value and how NPV is calculated.

(vii) The annual electricity bill for a plant is Rs. 40 Lakhs and accounts for 25% of the total energy bill. Calculate the annual energy bill for the company.

(viii) What are absolute standards?

(ix) What is greenhouse gas effect?

(x) Write down the different systems of energy flow.

(2×10=20)