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

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B. Tech 6th Semester Examination

Energy Managements (EE/EEE) (OS)

EE-6002

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 : Attempt Five questions in all, selecting one question from each of the section A, B, C, and D and all the subparts of the question in Section E. Marks for each question are given in bracket and assume missing data if any suitably.

SECTION - A

1. (a) Explain the nature of Indian economy and suggest energy management strategies for its continuous and sustained growth. (10)

   (b) State the functional areas where energy management is essentially required. (10)

2. (a) Explain in brief the provisions of National Building Code 2005 for energy management in buildings. (10)

   (b) Explain the various approaches for efficient energy management system giving examples. (10)

SECTION - B

3. (a) State the various categories of energy audit and explain any two in detail. (10)

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   (b) Explain in brief the various steps involved in energy audit of an electrical system. (10)

4. (a) State the applications of building data loggers and advanced controls in energy management of buildings. (10)

   (b) Explain the compact fluorescent lamp and state how it saves energy. (10)

SECTION - C

5. (a) Draw and explain the block diagram of a liquid chilling unit and function of its each component. (10)

   (b) Explain the construction and working of thermocouples. (10)

6. (a) State the working principle of total radiation pyrometer. How it differs from infra-red pyrometer? (10)

   (b) State the instruments used for flow measurement in an air conditioning system. Explain any one of them. (10)

SECTION - D

7. (a) Conduct energy audit of an Under Graduate Engineering College. Give the methodology of energy audit and audit report. (15)

   (b) Explain supply side management of an electrical system for energy conservation. (5)

8. (a) Explain the functioning of a dual-duct HVAC system with the help of a diagram. (10)

   (b) List down the factors that control and affect the cooling rate of an airconditioner. (10)

SECTION - E

9. (a) What are main features of energy efficient motor?

(b) State the term energy index.

(c) List out four objectives of energy management.

(d) What are types of fuels? Give two examples of each.

(e) Define wet bulb temperature.

(f) Define non-renewable energies with two examples.

(g) Define electronic ballast.

(h) Define iron losses with example.

(i) Define harmonics and give their types.

(j) Define calorific value and its units. (10×2=20)