

[Total No. of Questions - 9] [Total No. of Printed Pages - 3]
(2064)

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B. Tech 6th Semester Examination

Energy Management-II

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. All questions carry equal marks and assume missing data if any suitably.

SECTION - A

1. (a) State and explain the primary objectives of energy management programme. (10)
(b) State and explain the composition and function of energy management steering committee. (10)
2. (a) Explain the typical energy consumption pattern of different sectors in India. (8)
(b) State present Indian energy scenario and explain the various strategies to make India energy sufficient in near future. (12)

SECTION - B

3. (a) What do you understand by energy audits? Explain different types of energy audits. (10)

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- (b) Explain how energy audit report is formed and its evaluation procedure. (10)
- 4. Explain the various steps involved in energy audit. Briefly prepare an energy audit report for the hostel of an engineering college with capacity of 500 boarders and associated staff. (20).

SECTION - C

- 5. (a) State the factors determining the heating and cooling requirements for a building. (8)
- (b) Explain the functioning of a single duct, terminal reheat HVAC system with the help of a diagram. (12)
- 6. Explain the various steps involved in calculation of heating and cooling load for a commercial building with the help of a case study. (20)

SECTION - D

- 7. (a) Briefly explain the importance of energy conservation. (8)
- (b) Explain different types of electrical loads connected in a residential buildings and criteria for selection of these loads. (12)
- 8. (a) Explain the strategies to make an industrial complex energy efficient. (10)
- (b) Explain the power factor improvement by the use of synchronous capacitors. (10)

SECTION - E

- 9. Give brief answers to the followings:
 - (a) State the main elements of demand side management.

- (b) State the various renewable and non-renewable sources of energy with their estimated potential in India.
- (c) What is the need of employee participation in energy auditing?
- (d) Name the various thermal insulators in heating and cooling systems.
- (e) State what is meant by the short circuit capacity of an electrical circuit. (4×5=20)