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10EE842

Eighth Semester B.E. Degree Examination, Aug./Sept.2020
Energy Auditing and Demand Side Management

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting at least TWO questions from each part.

PART - A

- 1 a. Describe the present energy situation in India. (10 Marks)
b. Describe the different statutory public controls, which regulate the supply industry. (10 Marks)
- 2 a. Explain pay back analysis. Mention its advantages and disadvantages. (05 Marks)
b. Write a short note on time value of money concept. (05 Marks)
c. The equipment in a power station costs Rs.15,60,000 and has a salvage value of Rs.60,000 at the end of 25 years. Determine the depreciation value of the equipment at the end of 20 years by the following methods:
(i) Straight line method
(ii) Diminishing value method
(iii) Sinking Fund Method at 5% compounded annually (10 Marks)
- 3 a. Explain ten steps methodology for detailed energy auditing. (10 Marks)
b. What is ABT? What are the broad features of ABT design? (10 Marks)
- 4 a. Draw the single line diagram for a Typical AC power supply scheme and also explain the distribution scheme. (10 Marks)
b. Discuss the role of energy management team and key instruments required for energy auditing. (10 Marks)

PART - B

- 5 a. Define most economical power factor and derive expression for most economical power factor. (10 Marks)
b. A factory has a maximum load of 240 KW at 0.7 lagging with an annual consumption of 50,000 units. The tariff is Rs.50/KVA of MD plus 10 paise/unit. Calculate the flat rate of energy consumption. What will be annual savings if power factor is raised to unity? (10 Marks)
- 6 a. What is tariff? Enumerate the different types of tariff and explain each in brief. (10 Marks)
b. Explain some good practices in lighting. (05 Marks)
c. Write a short note on energy efficient motors. (05 Marks)
- 7 a. Define DSM and explain the concept of DSM. (06 Marks)
b. Discuss the tariff options for DSM. Which tariff promote DSM? (06 Marks)
c. Explain the various steps in DSM planning and implementation. (08 Marks)
- 8 a. Explain the Energy Conservation Opportunity in:
(i) Agricultural sector (ii) Industrial sector (10 Marks)
b. Enumerate the Techniques of DSM and explain any two methods with a neat sketch. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

