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10EE842

Eighth Semester B.E. Degree Examination, June/July 2015
Energy Auditing and Demand Side Management

Time: 3 hrs.

Max. Marks: 100

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

PART - A

- 1
 - a. Describe the present energy situation in India. (10 Marks)
 - b. Write a short note on standards, with respect to equipments of electrical engineering. (06 Marks)
 - c. What is Energy conservation? Explain. (04 Marks)
- 2
 - a. Develop cash flow model for single payment compound amount. (10 Marks)
 - b. In a Milk Industry, the existing low cost conventional 5HP motor is to be replaced with energy motor after 10 years. Assume that Rs 10,000 is to be provided after 10 years. Find the total fund during the course of 10 years by straight line depreciation method and sinking fund depreciation method. Plot the graph of total fund verses time in years for both the methods. Assume rate of interest 5% for sinking fund depreciation method. (10 Marks)
- 3
 - a. Explain the various classification of energy audit. (10 Marks)
 - b. Discuss the role of energy management team. (10 Marks)
- 4 Write short notes on :
 - a. Time value of money concept.
 - b. Layout of Typical ac power supply scheme.
 - c. Distribution scheme.
 - d. Advantages of energy audit. (20 Marks)

PART - B

- 5
 - a. Define Power factor and derive expression for most economical power factor. Discuss the importance of power factor improvement, from supplier and consumer point of view. (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 maximum demand plus 10 paise/unit. Calculate the flat rate of energy consumption. What will be annual saving if PF is raised to unity? (10 Marks)
- 6
 - a. What is Tariff? What are the different types of tariff? Explain. (10 Marks)
 - b. What is ABT? What are the broad features of ABT design? (10 Marks)
- 7
 - a. What is DSM? What is the scope of DSM? How did the concept of DSM evolved? (10 Marks)
 - b. With a flow chart, explain the various steps in DSM planning and implementation. (10 Marks)
- 8
 - a. Discuss the tariff options for DSM. Which tariff promote DSM? (10 Marks)
 - b. Explain the following terms :
 - i) Peak clipping
 - ii) Valley filling. (10 Marks)

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.