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Seventh Semester B.E. Degree Examination, Dec.09/Jan.10
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. Write a note on world energy scenario. (08 Marks)
b. Explain the energy conservation techniques used to reduce the energy costs. (06 Marks)
c. With respect to the supply system summarize the points in the distribution code. (06 Marks)
- 2 a. Explain pay back analysis. Mention its advantages and disadvantages. (06 Marks)
b. Develop a cash flow model for uniform series compound amount factor. (06 Marks)
c. You have accumulated Rs.5000 in credit card debt. The credit card company changes 18% nominal annual interest compounded monthly. You can only afford to pay only Rs.100 per month. How many months will it take you to pay-off debt and how much money will you have to pay as interest? (08 Marks)
- 3 a. Define energy audit. Explain the importance of energy audit in industry. (06 Marks)
b. Explain the detailed energy audit activities. (06 Marks)
c. Explain the different steps of presenting the energy audit results. (08 Marks)
- 4 a. Write short notes on the following:
i) The value of money concept. ii) Energy audit instruments. (10 Marks)
b. With a layout diagram, explain the typical a.c. power supply scheme. (10 Marks)

PART – B

- 5 a. Explain different types of tariffs commonly used. (08 Marks)
b. Explain the calculations of power factor correction. (06 Marks)
c. An alternator in supplying a load of 300 kW at a p.f. of 0.6 lagging. IF the power factor is raised to unity, how many more kilowatts can the alternator supply for the same kVA loading? (06 Marks)
- 6 a. What is ABT? Write the broad features of ABT design. (10 Marks)
b. Write a note on energy efficient motors. (10 Marks)
- 7 a. Define DSM and explain the concept of DSM. (06 Marks)
b. Explain the load management as a DSM strategy. (06 Marks)
c. Explain the basic ways of load shape objectives of DSM. (06 Marks)
- 8 a. Explain energy conservation opportunities in illumination systems. (06 Marks)
b. With a flow chart, explain corporate level organization of energy conservation programme. (06 Marks)
c. What is time-of-day pricing? With the help of suitable example, explain how this helps in an efficient DSM. (08 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.