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10EE842

Eighth Semester B.E. Degree Examination, June/July 2017
Energy Auditing and D.S.M

Time: 3 hrs.

Max. Marks:100

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

PART – A

- 1 a. Explain how energy sources are classified broadly. Give examples for each classification. (06 Marks)
- b. Write a brief note on “energy scenario in India”. (08 Marks)
- c. List the objectives of energy conservation act 2001. (06 Marks)
- 2 a. What do you meant by i) cash flow model ii) depreciation. (06 Marks)
- b. Develop a cash flow model for uniform series compound amount factor. (06 Marks)
- c. Calculate the depreciation for data give below, salvage value Rs = 0, life of the equipment = 5 years, initial expenditure P = Rs 1,50,000/-. For declining balance use a 200% rate, by using i) straight line method ii) sum of years digit method iii) Decline balance method. (08 Marks)
- 3 a. What is an energy audit? Explain data acquisition and data analysis with respect to energy audit. (06 Marks)
- b. Give the ten methodology steps for detailed energy audit and explain each one in brief. (10 Marks)
- c. Write a short note on “energy use profile”. (04 Marks)
- 4 a. Explain the typical A.C power supply scheme with suitable line diagram. (08 Marks)
- b. Write a short note on “energy audit report”. (06 Marks)
- c. A single phase motor is connected to 400V, 50Hz AC supply takes a 20A at a power factor of 0.7 lagging. Calculate the capacitance required in parallel with the motor to raise the power factor to 0.9 lagging. (06 Marks)

PART – B

- 5 a. Using the power distribution diagram discuss the location of capacitors in a plant to reduce the energy consumption. (06 Marks)
- b. What do you meant by Energy efficient motor (EEM), briefly discuss the design features of EEM. (06 Marks)
- c. What is ABT? Discuss the broad features of ABT design. (08 Marks)
- 6 a. Briefly discuss the lighting control systems are used at design stage. (08 Marks)
- b. Explain the following Indian tariffs
i) Three part tariff ii) Power factor tariff iii) KVA maximum demand tariff. (06 Marks)
- c. Write a note on energy efficient lamps i) CFL ii) HPSV iii) TLD. (06 Marks)
- 7 a. What is demand side management? Mention the benefits of DSM. (06 Marks)
- b. Explain: i) peak clipping ii) valley filling. (08 Marks)
- c. Discuss the energy conservation opportunities in
i) Agriculture sector ii) Illumination system. (06 Marks)
- 8 a. Briefly discuss various DSM based tariffs. (08 Marks)
- b. Write a note on DSM implementation issues. (06 Marks)
- c. Explain the plant level energy conservation program with flow chart. (06 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.