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10EE842

**Eighth Semester B.E. Degree Examination, Dec.2016/Jan.2017**  
**Energy Audit 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. Give classification of energy sources with example. (06 Marks)  
b. Discuss energy sources in India. (08 Marks)  
c. Mention the provisions provided in Indian Electricity Act 2003. (06 Marks)
- 2 a. Develop a cash flow model for Uniform Series Compound Amount Factor. (08 Marks)  
b. What is a simple pay back analysis? How it is used for comparing different investment options? (04 Marks)  
c. A project with initial investment of Rs 3,50,000/- generates net revenue of Rs 50,000/- per year. Considering the life cycle of the project to be 15 years, find out the feasibility of the project. Compute the cash flow interms of present worth. Assume discount rate to be 12% per year. (08 Marks)
- 3 a. Mention the principles on which the energy management is based. Explain the steps involved in Energy Management Strategy. (10 Marks)  
b. Tabulate ten steps involved in detailed energy audit. Give plan of action, purpose and results involved in each step. (10 Marks)
- 4 a. Write short notes on the following : i) Tax consideration in financial analysis of project.  
ii) Three pronged approach to energy management iii) Energy use profiles. (12 Marks)  
b. Give a single line diagram of a typical A.C power supply, mentioning respective voltage level. (08 Marks)

**PART – B**

- 5 a. Explain any six different types of tariff. (12 Marks)  
b. Derive an equation for most economic power factor. (08 Marks)
- 6 a. Give broad features of ABT design. (10 Marks)  
b. Write a note on energy efficient motors. (10 Marks)
- 7 a. Why DSM is required? Explain. (05 Marks)  
b. What is the scope of DSM? (05 Marks)  
c. Give DSM planning and implementation. (10 Marks)
- 8 a. Explain tariff structures that promote DSM activities. (10 Marks)  
b. Discuss the factors which influence customer participation in DSM.  
c. Explain the following terms :  
i) Peak clipping ii) Valley fillings. (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.