



10EE842

Eighth Semester B.E. Degree Examination, July/August 2021
Energy Auditing and Demand Side Management

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1 a. Explain the classification of Energy sources with examples. (09 Marks)
b. Describe the '3-pronged' approach to Energy management with suitable diagram. (07 Marks)
c. List the highlights of Energy Conservation Act – 2001. (04 Marks)
- 2 a. Explain payback analysis. Mention its advantages and disadvantages. (06 Marks)
b. What is depreciation? List the various methods available to calculate depreciation with formulae. (08 Marks)
c. An electric motor is purchased for Rs. 20,000/-. Its life is estimated for 10 years after which it is expected to have a salvage value of Rs, 1000/-. If depreciation is charged through sinking fund method, calculate the amount of depreciation fund at the end of 5th year and 8th year. The fund earns an interest at 5% per annum. (06 Marks)
- 3 a. Define Energy Audit. Explain the need for energy audit. (05 Marks)
b. Explain the detailed energy audit activities. (05 Marks)
c. Write short notes on Energy Audit Instruments. (10 Marks)
- 4 a. With a neat diagram, explain the typical ac power supply scheme. (10 Marks)
b. What is plant energy performance? Define production factor. (05 Marks)
c. Explain the time value of money concept. (05 Marks)
- 5 a. Write short notes on location of capacitors with diagram. (05 Marks)
b. Define tariff. Explain any four types of tariffs. (10 Marks)
c. What are energy efficient motors? Explain in detail. (05 Marks)
- 6 a. Derive an expression for most economical power factor considering constant active power. Draw relevant vector diagram. (10 Marks)
b. Calculate the annual bill of consumer whose maximum demand is 1000kW, power factor is 0.8 (lag) and load factor is 69%. The tariff used is Rs. 75 per KVA of maximum demand plus 15 paise per kWh consumed. (05 Marks)
c. Explain Luminous Efficacy and Color Rendering Index (CRI) in lighting system. (05 Marks)
- 7 a. What is demand side management? Mention its benefits with respect to supply industry, customer and society. (08 Marks)
b. Explain briefly the various tariff options for demand side management. (06 Marks)
c. Explain peak clipping and valley filling with diagram. (06 Marks)
- 8 a. Enumerate and explain the various issues faced while implementing DSM programs. (10 Marks)
b. Explain the Division level organization for DSM implementation. (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.