| Librarian | O-AWA |
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10EE842

(08 Marks)

Eighth Semester B.E. Degree Examination, July/August 2022 **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.

| | | DA DT A | |
|---|--|---|--|
| 1 | a. b. | Explain the present energy situation in World and in India. What is energy conservation? Explain the energy conservation techniques used to energy costs. | (12 Marks) reduce the (08 Marks) |
| 2 | a. b. c. | Explain payback analysis. Mention its advantages and disadvantages. Develop a cash flow model for uniform series compound amount factor. The following particulars are available for the purchase of an electrical machine: Invoice cost Rs.40,000 Accessories Rs.2500 Transportation charges Rs.500 Estimated salvage value Rs.5000 Installation cost Rs.1000 Estimated life 20 years Calculate by straight line method: (i) The amount to be recovered (ii) The annual depreciation cost (iii) The depreciation book-value at the end of 10 years. | (06 Marks) (08 Marks) |
| | | (iii) The depreciation book-value at the end of 10 years. | (001111111) |
| 3 | a. b. c. | Define energy audit. Explain the importance of energy audit in industry. Explain about the information to be collected during the detailed energy audit. Write short note on energy audit instruments. | (06 Marks) (06 Marks) (08 Marks) |
| | | | (0.4 % 5 % 1) |
| 4 | a. | With a vector diagram, explain the various components of power triangle. | (06 Marks) |
| | b. c. | With a single line diagram, explain the typical ac power supply scheme. Define and explain plant energy performance and production factor. | (08 Marks) (06 Marks) |
| | · . | Define and explain plant energy performance and explain plant energy performance | |
| | | PART - B | C . |
| 5 | a.b.c. | Define power factor. Obtain the expression for most economical power factor into of maximum KVA demand per annum and expenditure on power factor equipment. A 400V, 50 Hz, 3-\$\phi\$ line delivers 200 KW at 0.8 lagging power factor. It is desirthe line power factor to unity by installing shunt capacitors. Calculate the capeach unit if they are connected in (i) Star (ii) Delta. Explain the disadvantages of low power factor. | (08 Marks) red to raise |
| 6 | a. b. | Explain different types of tarriffs commonly used. Write a note on energy efficient motors. | (10 Marks) (10 Marks) |
| 7 | a. b. | (i) N-11 : (ii) V-11-x filing (iii) I and shifting | (10 Marks) (10 Marks) |
| 8 | a. | • | (00 Marks) |
| | b. | Explain about the energy conservation opportunities in illumination system. | (06 Marks) ogramme. |

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c. With a flow chart, explain corporate level organization of energy conservation programme.