USN

Eighth Semester B.E. Degree Examination, July/August 2022 Energy Auditing and Demand Side Management

Time: 3 hrs.

Max. Marks:100

10EE842

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

<u>PART – A</u>

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.40,000Accessories Rs.2500Transportation charges Rs.500Estimated salvage value Rs.5000Installation cost Rs.1000Estimated life 20 yearsCalculate by straight line method:(i)(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) (06 Marks)
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)
4	a. b. c.	With a vector diagram, explain the various components of power triangle. With a single line diagram, explain the typical ac power supply scheme. Define and explain plant energy performance and production factor.	(06 Marks) (08 Marks) (06 Marks)
		PART – B	
5	a.	Define power factor. Obtain the expression for most economical power factor inte of maximum KVA demand per annum and expenditure on power factor equipment.	rms of rate correction (08 Marks)
	b.	A 400V, 50 Hz, $3-\phi$ line delivers 200 KW at 0.8 lagging power factor. It is desire the line power factor to unity by installing shunt capacitors. Calculate the capacitors unit if they are connected in (i) Star. (ii) Delta	ed to raise acitance of
	c.	Explain the disadvantages of low power factor.	(06 Marks) (06 Marks)
6	a. b.	Explain different types of tarriffs commonly used. Write a note on energy efficient motors.	(10 Marks) (10 Marks)
7	a. b.	With a flow diagram, explain briefly DSM planning and implementation. Write short notes on: (i) Peak clipping (ii) Valley filling (iii) Load shifting	(10 Marks) (10 Marks)
8	a.	Why customer acceptance is important in implementation of DSM? How it can be	achieved?
	Ь. с.	Explain about the energy conservation opportunities in illumination system. With a flow chart, explain corporate level organization of energy conservation pro	(06 Marks) (06 Marks) gramme.

(08 Marks)