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**P.E.S. College of Engineering, Mandya - 571 401***(An Autonomous Institution affiliated to VTU, Belagavi)***Eighth Semester, B.E. - Electrical and Electronics Engineering****Semester End Examination; July / August - 2022****Energy Auditing and Demand Side Management**

Time: 3 hrs

Max. Marks: 100

**Course Outcomes****The Students will be able to:**

CO1: Analyze the Energy situation in the world and India, Energy consumption Energy Economic Analysis.

CO2: Demonstrate Energy Auditing.

CO3: Analyze Electrical Equipment and power factor correction.

CO4: Demonstrate the Demand Side Management.

CO5: Analyze the Load management.

**Note: I) PART - A is compulsory. Two marks for each question.****II) PART - B: Answer any Two sub questions (from a, b, c) for a Maximum of 18 marks from each unit.**

Q. No.	Questions	Marks	BLs	COs	POs
<b>I : PART - A</b>		<b>10</b>			
I a.	Explain the energy conservation schemes.	2	L1	CO1	PO6
b.	Explain concept of energy audit.	2	L1	CO2	PO6
c.	Mention the disadvantages of low power factor.	2	L1	CO3	PO6
d.	Mention the benefits of demand side management.	2	L1	CO4	PO6
e.	Define the terms;	2	L1	CO5	PO6
	i) Strategic conservations    ii) Peak shifting				
<b>II : PART - B</b>		<b>90</b>			
<b>UNIT - I</b>		<b>18</b>			
1 a.	Explain the terms;				
	i) Concept of ABT numerical problem	9	L3	CO1	PO6
	ii) Depreciation.				
	iii) Payback analysis				
b.	Write a brief note on energy situation in the world and India	9	L2	CO1	PO6
c.	How long will it take for a sum of money to double when accumulating at 5% interest?				
	i) On simple interest basis.	9	L3	CO1	PO7
	ii) If interest is compounded annually				
	iii) If interest is compounded quarterly				
	iv) If interest is compounded on true compound interest basis				
<b>UNIT - II</b>		<b>18</b>			
2 a.	Explain briefly the elements of energy audits.	9	L3	CO2	PO6
b.	What do you mean by presentation of energy audit results? Describe briefly.	9	L2	CO2	PO6
c.	Explain briefly measurements in energy audits	9	L2	CO2	PO7

<b>UNIT - III</b>		<b>18</b>			
3 a.	Explain the factors affecting energy efficient motors in detail.	9	L3	CO3	PO6
b.	Explain about the location of capacitors for power factor improvement.	9	L3	CO3	PO6
c.	A single phase motor connected to 440 V, 50 Hz supply takes 28 A at a power factor of 0.8 lagging .Calculate the capacitance required parallel with the motor to raise the power factor to 0.9 lagging.	9	L3	CO3	PO7
<b>UNIT - IV</b>		<b>18</b>			
4 a.	Explain briefly the different techniques of demand side management.	9	L2	CO4	PO6
b.	What is demand side management? How did the concept of DSM evolved? Mention the benefits of DSM.	9	L2	CO4	PO6
c.	Explain briefly the various tariff options for DSM.	9	L2	CO4	PO6
<b>UNIT - V</b>		<b>18</b>			
5 a.	Explain in detail about the different load priority techniques of load management with necessary examples.	9	L3	CO5	PO6
b.	With a flow diagram, explain division level organization and corporate level organization of energy conservation programme.	9	L3	CO5	PO6
c.	Write a short note on;				
	i) Peak clipping	9	L3	CO5	PO6
	ii) Promotion of high efficient technologies				

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