Reg. No.												

Question Paper Code	12245

M.E. / M.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2023

Third Semester

M.E. - Power Electronics and Drives

20PPEEL306 - ENERGY MANAGEMENT AND AUDITING

(Regulations 2020)

Duration: 3 Hours Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	Define energy audit.	*2,K1,CO1*
2.	What is the need for energy management?	*2,K1,CO1*
3.	List out some examples of economic models.	*2,K2,CO2*
4.	Tell the basic parts of the time value of money.	*2,K1,CO2*
5.	Interpret few energy management possibilities in transformers.	*2,K2,CO3*
6.	How can we conserve energy in motor?	*2,K1,CO3*
7.	Demonstrate metering in energy.	*2,K2,CO4*
8.	Identify what happens when two transformers are connected in parallel.	*2,K3,CO4*
9.	Illustrate the use of task lighting.	*2,K2,CO5*
10.	Infer the schematic view of steam turbine cogeneration system.	*2,K2,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Demonstrate the methods of energy monitoring.	*13,K2,CO1*
		OR	
	b)	Explain energy conservation and its importance.	*13,K2,CO1*
12.	a)	Summarize various demand control techniques and explain in detail.	*13,K2,CO2*
		OR	
	b)	Outline in brief the HVAC and energy management.	*13,K2,CO2*
13.	a)	Illustrate the functions of capacitors in energy management in brief.	*13,K2,CO3*
		OR	
	b)	Identify and explain the need of transformers in energy management in detail.	*13,K2,CO3*

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

14. a) Examine the need of following with respect to energy management
(i) Utility meters. *7,K4,CO4*
(ii) Demand meters. *6,K4,CO4*

OR

b) Analyze metering for energy management. *13,K4,CO4*

15. a) Discover the various types of light sources & discuss about its luminous performance characteristics. *13,K4,CO5*

OR

b) Explain the principles of cogeneration. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Evaluate the importance of synchronous machines in energy management. *15,K5,CO3*

OR

b) Examine the role of the Smart meters in the energy management systems. *15,K4,CO4*