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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

May / June 2025 Semester End Main Examinations

Programme: B.E.

Semester: VIII

Branch: Mechanical Engineering

Duration: 3 hrs.

Course Code: 22ME8PEEMA

Max Marks: 100

Course: Energy Management and Auditing

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.

UNIT - I			CO	PO	Marks
1	a)	Explain the present Indian Scenario of supply and demand of Electrical Energy.	<i>CO1</i>	<i>PO1</i>	06
	b)	Mention the places of any three oil reserves in India and their significance.	<i>CO1</i>	<i>PO1</i>	06
	c)	Discuss in brief about global environmental concerns and their remedies.	<i>CO1</i>	<i>PO1</i>	08
OR					
2	a)	Explain the energy security and its key aspects.	<i>CO1</i>	<i>PO1</i>	06
	b)	Write a short note on Energy Action Plan.	<i>CO1</i>	<i>PO1</i>	06
	c)	What is sensitivity and risk analysis? Explain factors affecting sensitivity and risk analysis.	<i>CO1</i>	<i>PO1</i>	08
UNIT - II					
3	a)	Write a short note on Energy Conservation Act 2001.	<i>CO2</i>	<i>PO1</i>	06
	b)	Explain the significance of Energy Conservation Act.	<i>CO2</i>	<i>PO1</i>	06
	c)	What is energy management? Discuss the objectives of energy management	<i>CO2</i>	<i>PO1</i>	08
OR					
4	a)	Under the Energy Conservation Act, indicate any five designated consumers.	<i>CO2</i>	<i>PO1</i>	06
	b)	Explain the role of top management in Energy management program?	<i>CO2</i>	<i>PO1</i>	06
	c)	List the energy conservation opportunities in the industries sector.	<i>CO2</i>	<i>PO1</i>	08
UNIT - III					
5	a)	What are the different losses in transformer? How transformer losses can be minimized?	<i>CO3</i>	<i>PO1</i>	06
	b)	Explain need of Electrical Load Management.	<i>CO3</i>	<i>PO1</i>	06

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

	c)	Write the step-by-step approach to control maximum energy demand.	CO3	PO1	08
		OR			
6	a)	How losses in an electrical motor can be minimized?	CO3	PO1	06
	b)	Explain the general fuel economy measures in furnaces.	CO3	PO1	06
	c)	What are the measures for Energy conservation in i) Industrial furnaces, ii) Pump iii) Electrical motor iv) Boilers	CO3	PO1	08
		UNIT-IV			
7	a)	What is Energy Audit? Explain how the detailed Energy Audit is carried out.	CO4	PO1	06
	b)	Discuss the preliminary energy audit and detailed energy audit.	CO4	PO1	06
	c)	What are the duties and the responsibilities of Energy Managers?	CO4	PO1	08
		OR			
8	a)	What are the steps involved in Energy action planning?	CO4	PO1	06
	b)	Write short notes on: i) Energy policy. ii) SCADA systems.	CO4	PO1	06
	c)	Explain the use of benchmarking the energy consumption.	CO4	PO1	08
		UNIT - V			
9	a)	Discuss the role of demand side management.	CO5	PO1	06
	b)	Demonstrate the obligations of SDAs under AgDSM program?	CO5	PO1	06
	c)	What is an ESCO? How does the ESCO model function?	CO5	PO1	08
		OR			
10	a)	What are the roles of SDAs in smooth functioning of Energy Clubs?	CO5	PO1	06
	b)	Discuss the activities of BEE to improve energy efficiency of MSMEs in India.	CO5	PO1	06
	c)	Write a note on national program on Energy efficiency and Technology upgradation of SMEs in India?	CO5	PO1	08
