U.S.N.										

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

Autonomous Institute Affiliated to VTU

January 2024 Semester End Main Examinations

Programme: B.E. **Semester: VII**
Branch: Institutional Elective **Duration: 3 hrs.**
Course Code: 23CY7OEECM **Max Marks: 100**
Course: Energy Crisis Management

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

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.

		UNIT - I	CO	PO	Marks
1	a)	Distinguish primary and secondary sources of energy with suitable examples.	CO1	PO1	**6**
	b)	Describe the various forms of energy with suitable examples.	CO2	PO7	**7**
	c)	List the objectives and benefits of energy management programme.	CO2	PO7	**7**
		UNIT - II			
2	a)	Illustrate the factors affecting geothermal power plants.	CO3	PO4	**6**
	b)	Elaborate the components and working of windmill. Discuss the challenges associate in windmill.	CO2	PO7	**7**
	c)	Describe the construction and working of pyranometer with a neat diagram.	CO2	PO7	**7**
		OR			
3	a)	Elucidate the construction and working of PV cell. Discuss the demerits.	CO1	PO1	**6**
	b)	Appraise the statements: a) Plants are not preferred around the site of wind power plant. b) Horizontal axis wind turbine is a successful model of wind turbine.	CO3	PO4	**7**
	c)	Outline the factors affecting wind power system and describe a mathematical correlation of it.	CO3	PO4	**7**
		UNIT - III			
4	a)	Illustrate the working function of electrostatic double-layer capacitors. Mention its properties.	CO2	PO7	**6**
	b)	Differentiate between supercapacitor and battery. Describe the merits of supercapacitors.	CO2	PO7	**7**
	c)	Explain infinite conductivity in superconductor and analyze Meissner effect with a neat diagram.	CO3	PO4	**7**

			UNIT - IV			
	5	a)	Summarize the classification of biogas plants. List its salient features.	*CO3*	*PO4*	**6**
		b)	Outline the working of fluidized-Bed Gasifier with a neat labelled diagram.	*CO2*	*PO7*	**7**
		c)	Explain the construction and working of microbial fuel cell with a neat labelled diagram.	*CO2*	*PO7*	**7**
			UNIT - V			
	6	a)	Summarize the major outcomes of Energy Audit.	*CO1*	*PO1*	**6**
		b)	Describe the steps involved in energy audit procedure.	*CO1*	*PO1*	**7**
		c)	Elaborate on the various energy forecasting models in energy audit.	*CO2*	*PO7*	**7**
			OR			
	7	a)	Illustrate the Energy optimization methodologies with suitable examples.	*CO1*	*PO1*	**6**
		b)	Describe the Energy Index and Cost index in energy audit with respective mathematical expression.	*CO3*	*PO4*	**7**
		c)	Justify (i) Energy audit is the key to efficient energy use. (ii) Energy efficiency is an integral part of energy conservation.	*CO2*	*PO7*	**7**

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