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: 23CY7OEGCE **Max Marks: 100**
Course: Green Chemistry and Green Engineering

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)	Explain hydrogen as a green fuel. highlight the strategic plan of green hydrogen mission of government of India.	CO1	PO2	**8**
	b)	Explain safer routes to synthesize carbaryl to avoid the incidents such as Bhopal Gas incident.	CO1	PO2	**6**
	c)	Explain any three principles of green chemistry	CO1	PO2	**6**
		UNIT – II			
2	a)	Discuss the principle, methodology advantages, disadvantages of photocatalytic reactions.	CO1	PO2	**8**
	b)	Explain the role of water as a green solvent.	CO2	PO6	**6**
	c)	Explain the synthesis of Aspirin by Microwave assisted reactions.	CO3	PO7	**6**
		UNIT - III			
3	a)	Explain the principle and working of Light emitting diodes (LED)	CO2	PO6	**8**
	b)	Explain the uses of fiber optics in lighting technology.	CO2	PO6	**6**
	c)	Explain the principle and applications of cool roof paints.	CO3	PO7	**6**
		OR			
4	a)	Explain Water, ammonia & lithium bromide-water absorption refrigeration systems	CO1	PO2	**8**
	b)	What are optical fibers. How are they classified.	CO2	PO6	**6**
	c)	Explain the principle of solar air heating systems.	CO3	PO7	**6**
		UNIT - IV			
5	a)	Explain Composition, Characteristics and various Toxic materials present in e-waste.	CO1	PO2	**8**
	b)	Explain effect of e-waste for human health.	CO3	PO7	**6**

		c)	Explain the classification of bio medical waste.	*CO1*	*PO2*	**6**
			OR			
	6	a)	Explain waste minimization, waste segregation and labeling of biomedical waste	*CO1*	*PO2*	**8**
		b)	Explain the various sources and remediation of e-waste from electronic and electrical products.	*CO2*	*PO6*	**6**
		c)	Discuss the various methods of recovery of metals from electronic industry.	*CO3*	*PO7*	**6**
			UNIT - V			
	7	a)	Explain plant-based materials as green building materials.	*CO2*	*PO6*	**8**
		b)	With appropriate example discuss the criteria for bio degradability of a polymer.	*CO3*	*PO7*	**6**
		c)	Explain the various stages involved in the processing's of wood polymer composites (WPC).	*CO3*	*PO7*	**6**

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