U.S.N.										

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

Autonomous Institute Affiliated to VTU

July 2023 Semester End Main Examinations

Programme: B.E. **Semester: VIII**
Branch: Information Science and Engineering **Duration: 3 hrs.**
Course Code: 20IS8HSGCG **Max Marks: 100**
Course: Green Computing **Date: 04.07.2023**

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)		Describe the Holistic, multipronged approach to greening IT with a neat diagram.	*CO1*		**08**
	b)		Illustrate the different stages in the life cycle of an electronic device. Order these stages in decreasing order based on their environmental impact from your perspective, and give your rationale.	*CO2*	*PO1*	**06**
	c)		Is IT more of a problem or a solution to environmental sustainability and sustainable development? Justify.	*CO3*	*PO2*	**06**
			UNIT - II			
2	a)		Justify how buffering during multimedia playback saves energy consumption?	*CO3*	*PO2*	**05**
	b)		Consider the scenario of storing 256MB file fragmented and unfragmented states. Apply data efficiency technique for energy efficiency.	*CO2*	*PO1*	**05**
	c)		Illustrate the software energy efficiency techniques with appropriate diagram.	*CO2*	*PO1*	**10**
			OR			
3	a)		Identify the software attributes that bring environmental, social as well as economic benefits.	*CO3*	*PO2*	**10**
	b)		Define sustainable software. Provide any two benefits.	*CO1*		**05**
	c)		Identify the Usage-related attributes that impact the usage at runtime.	*CO3*	*PO2*	**05**
			UNIT - III			
4	a)		Highlight the energy challenges associated with a data center.	*CO1*		**06**
	b)		Consolidate Server power management of BMSCE Data center considering all use cases and benefits.	*CO2*	*PO1*	**08**

		c)	How can virtualization technologies contribute to the energy efficiency of a green data center?	*CO3*	*PO2*	**06**
			UNIT - IV			
	5	a)	Summarise the core components of Green networking technology.	*CO1*		**06**
		b)	Network efficiency can be enhanced by the design of protocols used. Reducing the number of bits associated with a transmission and minimizing network load will optimize communication efficiency. Identify the objectives of optimization.	*CO3*	*PO2*	**08**
		c)	Highlight the objectives of Green Network Protocols.	*CO1*		**06**
			OR			
	6	a)	Green ICT can be used to both deliver tactical solutions for businesses to obtain some quick gains and meet legislative needs as well as enable longer term strategic solutions across a group of organizations that form a green business ecosystem. This impact, or time-based range, of green IT strategy's influence within and across an organization ranges from operational to strategic-exploratory. As a responsible citizen, can you depict the range of impact of green IT strategies on an organization?	*CO5*	*PO2*	**10**
		b)	An organization changes or transforms along with different lines or dimensions. Identify the dimensions in a green IT strategy implementation.	*CO4*	*PO2, PO7*	**10**
			UNIT - V			
	7	a)	Understanding the impacts of a product or service requires an analysis of all potential impacts associated with a product, process or service for its entire life cycle. Is there any technique to achieve this? If so give the complete details.	*CO4*	*PO2, PO7*	**10**
		b)	Explain the hierarchy of sustainability models. What is the role of sustainability frameworks, principles, and tools?	*CO1*		**10**

****