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

Autonomous Institute Affiliated to VTU

June 2025 Semester End Main Examinations

Programme: B.E.   **Semester: VII**

Branch: Information Science and Engineering   **Duration: 3 hrs.**

Course Code: 22IS7HSCSL   **Max Marks: 100**

Course: Cyber Security and Cyber Law

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

			UNIT - I	*CO*	*PO*	**Marks**
1	a)		Define software vulnerabilities in cybersecurity landscape. List the pervasiveness and consequences of software vulnerabilities	*CO1*	*PO5*	**06**
	b)		How have changes in security challenges and software structure affected the way we secure software systems against advanced cyber attacks?	*CO1*	*PO5*	**06**
	c)		How can the principle of software assurance, which states that "Risk concerns shall be aligned across all stakeholders and all interconnected technology," be exemplified in a real-world scenario?	*CO2*	*PO6*	**08**
			OR			
2	a)		Provide the significance of the elements that together form the CIA Triad, which continues to be a cornerstone of modern information security frameworks.	*CO1*	*PO5*	**06**
	b)		How can organizations ensure risk alignment across stakeholders and technology elements to address vulnerabilities in interconnected systems like healthcare?	*CO2*	*PO6*	**07**
	c)		How does the Wireless Emergency Alerts (WEA) service coordinate across diverse stakeholders and systems to ensure timely and effective delivery of geographically targeted emergency alerts?	*CO2*	*PO6*	**07**
			UNIT - II			
3	a)		Mention the types of attack that are prevalent in cybercrimes:	*CO1*	*PO8*	**06**
	b)		How does the concept of cyberdefamation, as defined under IPC Section 499, balance the right to an unimpaired reputation with the right to freedom of expression in the digital age?	*CO2*	*PO6*	**08**
	c)		What strategies, including the 5P mantra and the motto "Stranger is Danger," can netizens adopt to ensure their safety and security in the era of cybercrime?	*CO1*	*PO8*	**06**
			OR			

REAPPEAR EXAMS 2024-25

	4	a)	Provide the types of cybercriminals and the classifications of cybercrimes with examples	CO2	PO6	**06**
		b)	Identify the challenges in compiling data on the business impact of cybercrime.	CO1	PO5	**06**
		c)	Interpret the risks and consequences associated with software piracy, computer sabotage, email bombing, and the misuse of Usenet newsgroups as sources of cybercrimes?	CO2	PO6	**08**
			UNIT - III			
	5	a)	Distinguish between static and dynamic analysis of the existing malware detection mechanisms.	CO1	PO5	**08**
		b)	How can machine learning be used for vulnerability detection in code, and what are the differences between anomaly detection methods and pattern recognition methods.	CO2	PO6	**06**
		c)	How do DoS and DDoS attacks work, and list the methods of intrusion detection	CO1	PO8	**06**
			OR			
	6	a)	How do signature-based and anomaly-based intrusion detection methods differ, and how can machine learning features enhance DoS/DDoS attack detection?	CO1	PO5	**07**
		b)	What are the key characteristics of biometric traits that need to be considered when selecting the appropriate biometric trait for a given application?	CO2	PO8	**07**
		c)	Discuss k-means clustering and k-medoids clustering techniques for anomaly and intrusion detection	CO2	PO6	**06**
			UNIT - IV			
	7	a)	State the provisions of section 1 regarding the short title, extent, commencement and application in cyber law.	CO1	PO5	**10**
		b)	Interpret the provisions of Section 65 of the Indian Information Technology Act, 2000. What actions are considered an offense under this section, and what penalties are prescribed for tampering with computer source documents?	CO2	PO6	**10**
			OR			
	8	a)	What provisions under the Indian Information Technology Act, 2000, deal with the attribution of electronic records? Discuss how these provisions establish accountability for electronic records in digital transactions.	CO2	PO6	**10**
		b)	How does the Indian Information Technology Act, 2000 address the use of digital signatures? Explain the role of the Central Government in framing rules to regulate their use for ensuring secure electronic communication.	CO1	PO8	**10**
			UNIT - V			
	9	a)	In the context of opening a bank account, explain the obligations of the Data Fiduciary (Y) when processing personal data of a Data Principal (X) for Know-Your-Customer (KYC) requirements using a live, video-based identification process. What notice must be provided to the Data Principal regarding the personal data and its purpose?	CO3	PO12	**07**

				CO3	PO12	08
		b)	Outline the obligations of a Data Fiduciary regarding the processing of personal data of a child or a person with a disability who has a lawful guardian.			
		c)	Provide the duties of a Data Principal under the Data Protection Act	CO3	PO12	05
			OR	CO3	PO12	
	10	a)	Prescribe the right that a Data Principal has to request information about their personal data from a Data Fiduciary?	CO3	PO12	07
		b)	In the scenario where X, a telecom service provider, contracts Y, a Data Processor, to email bills to customers, what obligations does X have when a customer, Z, withdraws consent for receiving bills via email and opts to receive them through the app? Explain the actions X must take to ensure the cessation of processing Z's personal data for emailing bills	CO3	PO12	08
		c)	Provide the provisions for the processing of personal data outside India under the Data Protection Act?	CO3	PO12	05

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