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Daffodil International University

Faculty of Science & Information Technology

Department of Computer Science and Engineering

Final Examination, Spring'24

Course Code: CSE423, Course Title: Information Security

Level: 4, Term: 2 **Batch: 57**

Time: 2 Hour **Marks: 40**

Answer ALL Questions

[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]

1.	a)	A client of "TechGuard" software company, receives an email that appears to be from their bank, asking them to click on a URL to verify their account information. The email has the bank's logo and professional language. Upon clicking on the link the clients account got compromised immediately. Now **explain** what might have caused the security risk to trigger in this case and also **illustrate** how AI & ML can be used to mitigate this risk.	5	CO1
	b)	Rabeya is a senior developer at "DigiHealth," an online health care providing platform that processes a large volume of sensitive patient data, including personal details. To ensure the authenticity of this sensitive data, she decided to utilize the [illegible]. Explain how using this algorithm would ensure the authenticity of the data.	5	
	c)	Define the plans, responsibilities and benefits of *Incident Management* briefly.	5	
		[illegible] appointed Chief Information Security Officer (CISO) for "JobNet," a [illegible] online job management platform, you are tasked with developing a comprehensive security plan to safeguard the network infrastructure, [illegible] across the platform. Your responsibility is to develop a thorough security strategy aimed at safeguarding the CIA of the system. This strategy must encompass defenses against potential network threats, known and unknown attacks and data security.	10	CO2
	b)	GPT 4.0 is a chatbot developed by OpenAI uses both supervised and reinforcement learning techniques for its training purposes. Unlike traditional search engines, GPT 4.0 is unique. For example, it can write and debug computer programs, compose music, teleplays, fairy tales and essays; answer test, and write poetry and song lyrics. It's training data includes information about Internet phenomena and programming languages. **Discover** the risk scenarios that can be triggered using GPT 4.0 based on the information provided above and also **analyze** the *overall risk rating* according to your analysis of the *risk likelihood* and *risk impact factor*.	5	

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3.	a)	Rahim is a 30-year-old software engineer with a deep understanding of programming and cybersecurity. Frustrated with the political climate and eager to make a statement, Rahim decides to hack into a prominent news website, "DailyNews Online," which he believes is biased in its reporting. His goal is to deface the website and post fabricated articles to spread misinformation. After successful intrusion, Rahim posted several false news articles under the guise of legitimate journalists. Analyze what potential legal consequences could he face under Digital Security Act-2018?	7
	b)	Illustrate how *Patents* can be used to safeguard intellectual properties?	3