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Daffodil International University

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Final Examination, Spring 2023
Course Code: CSE423, Course Title: Information Security
Level:4 Term:1 & 2 Batch: 54 & 55

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)	Ahmed and his team have been hired as a security specialist to secure the entire computer system of DIU. The university's system comprises various components, including servers, databases, network infrastructure, and user devices such as computers and mobile devices. Your primary objective is to ensure the highest level of security to protect sensitive data, prevent unauthorized access, and mitigate potential cyber security threats. **Develop** a comprehensive plan outlining the steps you would take to secure each mentioned components of the entire university system.	10	CO2
	b)	A government agency needs to transmit confidential data to another agency located in a different city. They decide to use encryption to protect the data during transmission. While symmetric encryption consumes less processing power and also cost effective; Asymmetric encryption is more secure. They chose to use a combination of both type of encryption methods to build their model that would provide highest security in less cost. How can they **build** this model? ***Note that they have to include both types of encryptions in their model.	5	
2.	a)	One of the databases of Sunflower Transportation company has been hacked. The hackers used a new kind of virus to hack the system hence their current traditional Antivirus system couldn't detect it. **Explain** how can the company upgrade their antivirus system so that in future they can fight with these new kinds of malwares?	5	CO1
	b)	**Outline** the ethical issues and legal implications associated with the use of zero-day exploits by hackers. **Summarize** the challenges faced by organizations in addressing these vulnerabilities and propose strategies to mitigate the risks.	5	
	c)	A multinational company has recently detected suspicious network activity and suspects that an unauthorized device might have been connected to the corporate network. Your task is to conduct a network scan to identify any rogue devices and assess potential vulnerabilities. Now, **Apply** the appropriate scanning technique.	5	
3.	a)	Some years back, a group of extremists spread a rumor that a Buddhist youth from Ramu had posted a photo to Facebook deemed insulting to the holy book of Islam. The extremists then launched a series of violent attacks on the local Buddhist community. A subsequent investigation indicated that the victims Facebook account may have been hacked in order to upload the manipulated image that served as the trigger for the violence. **Analyze** the potential legal consequences the extremists would face under Digital Security Act 2018?	7	CO3
	b)	**Illustrate** why the Penal code of Bangladesh is not adequate to fight cybercrime?	3	

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