Daffodil International University

**Faculty of Science & Information Technology**

**Department of Computer Science & Engineering**

**Final Examination, Summer 2026**

**Course Code: CSE112 , Course Title: Computer Fundamentals**

**Level: 1 Term: 1 Batch: 72**

**Time: 02:00 Hrs** **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.]*

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| 1. | *a)* | A travel agency wants to create a system to decide which Cox's Bazar tour package a customer can book.<br>First, the system checks the customer's tour budget.<br>• If the budget is 20,000 taka or more, then it checks the number of vacation days.<br>• If the customer has 3 days or more, the system books the **Ocean Escape package**.<br>• If the customer has less than 3 days, the system books the **Beach Break package**.<br>• If the budget is less than 20,000 taka, the system displays **"Insufficient budget."**<br>Finally, the system displays the selected tour package or the message "Insufficient budget." Now draw a flowchart for the above problem. | [5] | CO2 |
| | *b)* | A customer wants to choose the best Internet Service Provider (ISP) based on download speed. The system takes the download speeds (in Mbps) offered by three different ISPs and determines which ISP provides the highest download speed.<br>Finally, the system displays the name of the ISP with the highest download speed. Write an algorithm for the above problem. | [5] | |
| 2. | *a)* | During the **FIFA World Cup 2026**, a journalist uses the official tournament portal to access match schedules, team information, and confidential media documents. An unauthorized person gains access to the journalist's account and views the confidential documents without permission. Later, a cyberattack causes the tournament portal to become inaccessible for several hours, preventing journalists from accessing important tournament information.<br><br>Which parts of the CIA Triad are affected in this scenario? Identify the affected parts and justify your answer with proper reasoning. | [2+3] | CO3 |
| | *b)* | **Scenario 1**<br>Minutes before the 2026 World Cup Final kicks off, millions of fake requests are sent to FIFA's official live-streaming website. The servers | [3+2] | |

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| | | become overloaded, preventing genuine fans from watching the match online.<br>**Scenario 2**<br>Before the 2026 FIFA World Cup Final, Rafin receives an email claiming to be from the "Official FIFA Ticket Office." The email says he has won two VIP tickets and asks him to log in using his FIFA account to claim them. After entering his username and password, he realizes the website was fake.<br>**Scenario 3**<br>A fan downloads a free "World Cup 2026 Match Predictor" application from an unknown website. After installing it, many of his files become damaged, and when he shares the application with friends, their computers experience the same problem.<br><br>**i.** For each scenario, identify the type of network attack and justify your answer.<br>**ii.** Mention and briefly explain two best practices for ensuring safe digital interactions. | | |
| **3.** | *a)* | A large company stores its confidential employee and customer information on a cloud system. The company wants exclusive access to its cloud environment and needs to customize security settings according to its internal policies. It also wants its computing resources to be isolated from other organizations. Although this system provides greater control and privacy, the company has to bear the cost of dedicated infrastructure and maintenance.<br>Based on the scenario, identify the type of cloud deployment model being used. Write characteristics and limitations of that model. | **[5]** | **CO3** |
| | *b)* | Write down 5 differences among LAN, MAN and WAN. | **[5]** | |
| **4.** | *a)* | A smart agricultural research facility uses different sensors to monitor its operations. During a dry season, the automated irrigation system checks the moisture level of the soil before deciding whether to supply additional water to the crops. At the same facility, a temperature-controlled storage room suddenly produces smoke and an unusual increase in heat. The monitoring system immediately sends an alert to the facility manager.<br><br>Identify the appropriate sensor for each of the two situations and justify your answers based on how each sensor works and what it detects. | **[2+3]** | **CO3** |
| | *b)* | A football club analyzes data from its previous matches and fan activities to improve its performance and decision-making:<br>**A:** The club analyzes match data to determine why its performance dropped in several away matches.<br>**B:** Based on player performance and upcoming opponents, the club's analytics system recommends which players should start in the next match.<br><br>Determine the type of analytics represented by each situation (A, B) and justify your answers with appropriate reasoning. | **[5]** | |