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Daffodil International University

Faculty of Science & Information Technology
Department of Software Engineering
Final Examination, Summer 2026
Course Code: SE 111; Course Title: Computer Fundamentals
Sections & Teachers: A,B,C(DMH), D,E(WNI), F,G(SI), H,I,J(MIS), K,L,M(SD), N(RRB)

Time: 2:00 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.]

1. a) Lionel Messi has signed a performance-based bonus contract with Barcelona. After every match, the club calculates his bonus based on his performance. The bonus policy is as follows:

- Messi earns **5,000 BDT** for each goal he scores.
- He earns **3,000 BDT** for each assist.
- If Messi scores **2 or more goals** in the match, he receives an additional **10,000 BDT** as a performance bonus.
- If the team loses the match, **5,000 BDT** is deducted from his total bonus.

i. **Construct** an algorithm to find the total bonus Messi will get.
ii. **Draw** a flowchart based on your algorithm.

[Marks-10+10]

b) **Solve** errors in the following C code, update it after correcting the errors and then write down the corrected version. Also, **trace** the exact expected output.

```
1.  #include <stdio.h>
2.  int main[]
3.      float x = 50 y = 15 z = 2;
4.      x = x + y;
5.      y = x / 5;
6.      z = z * y;
7.      x = x - z;
8.      y = y + z;
9.      z = x / y;
10.     print("x = %d, y = %d, z = %d x, y, z")
11.     return 0;
```

[Marks-5]

CLO-3
Level-3

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	c)	**Scenario-1:** In the Software Engineering Department, all devices are connected through a single central cable that acts as the communication backbone. Data sent from one device travels along the cable and is accessible by all other devices. If the main cable fails, the entire network stops functioning. **Scenario-2:** In the Business Studies Department, the network is set up to provide local connectivity across a single building. Devices are placed within a close physical range, and they are connected to each other. But this is costly as compared to the other network topologies. **Determine** the network topology or network type based on the given descriptions for the both scenarios. Provide your reasoning and a diagram for each.	[Marks-5]	
2.	*a)*	Cristiano Ronaldo is a brand ambassador for a global bank and frequently uses its online banking portal to manage his finances. One afternoon, he logs into his bank account to check his balance and leaves the session active while browsing other websites in another browser tab. During this time, he visits a seemingly harmless sports news website that has been compromised by attackers. Without Ronaldo's knowledge, the malicious website automatically sends a hidden request to the bank's server, instructing it to transfer **$10,000** from his account to the attacker's account. Since Ronaldo is already authenticated and his banking session is still active, the bank's server trusts the request and processes the transaction without asking for additional verification or confirmation. As a result, the unauthorized transfer is completed, putting Ronaldo's account and financial information at risk. **Detect** the type of vulnerability mentioned in the above scenario briefly and **explain** the steps (at least 5) that Cristiano Ronaldo should follow to prevent such vulnerabilities.	[Marks-10]	**CLO-4** ***Level-4***