

Student ID (last 2 digits): _____ Batch _____

Set code: Bruno



Daffodil International University
Faculty of Science & Information Technology
Department of Information Technology & Management

Mid-Term Examination, Fall 2026

Course Code: ITM 323; Course Title: Software Quality Assurance & Testing

Sections & Teachers: FM (A)

Time: 1:30 Hrs

Marks: 25

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 ride-sharing company launches a mobile application that allows passengers to <u>book rides</u>, <u>calculate fares</u>, and <u>make payments</u>. Before launch, the QA team reports that <u>all identified defects</u> have been fixed. However, (after deployment, passengers experience incorrect fare calculations during peak hours and occasional failures when cancelling rides.) Further investigation reveals that the testing team repeatedly used the same test cases, focused equally on all modules despite a higher risk in payment processing, and started testing only after development was completed. Based on the scenario, identify and describe five relevant principles of software testing. Justify each principle with appropriate evidence from the scenario.	[Marks-5]	
b)	A company is developing an online examination platform for <u>educational institutions</u>. The major requirements include (question management, candidate authentication, examination scheduling, and automatic result generation.) Management wants a development approach that establishes clear relationships between development activities and their corresponding testing activities. However, some examination policies may change after the requirements are initially documented. Answer the following: i. Describe the V-Model and explain its suitability for developing the proposed examination platform. Support your answer with relevant details from the scenario. [2 Marks] ii. Explain the major development phases of the V-Model and their corresponding testing phases. Illustrate the relationships using a clearly labelled diagram. [3 Marks]	[Marks-5]	CLO-1 Level-2

2.	a)	A software company has <u>limited time and resources</u> to test its online examination system, which contains multiple input fields with defined valid ranges. Define test effort in software testing and analyze how the selection of Worst-Case and Robust Worst-Case Boundary Value Analysis affects the number of test cases and the required testing effort. Recommend the more appropriate technique for this project and justify your decision based on testing coverage and resource constraints.	[Marks-3]	CLO-2 Level-4
	b)	A commercial bank offers additional interest bonuses on fixed deposits based on certain conditions. The bonus depends on the <u>deposit amount</u>: deposits below 50,000 BDT receive no bonus, amounts from 50,000 to less than 200,000 receive 5%, from 200,000 to 500,000 receive 8%, and amounts above 500,000 receive 10%. Customers who have maintained their account for <u>more than 3 years</u> are eligible for an additional 2% bonus. Customers with a "Premium" status receive an extra 3% bonus. However, regardless of these additional benefits, the total bonus interest must not exceed 15%. Furthermore, any deposit amount exceeding 1,000,000 BDT is considered invalid and will not be accepted. Identify the valid and invalid equivalence classes for the given system and apply the Equivalence Class Partitioning (ECP) technique to create appropriate test cases.	[Marks-5]	
	c)	The ABC bank has a strict policy for cashing checks to prevent losses from bad checks. A check will be cashed if the person presenting it has a valid account number and the signature matches the account records. Government checks can also be cashed, but only if the person provides valid photo identification; no account number is required in this case. Additionally, company payroll checks can be cashed only for account holders, even if they have a photo ID. No other types of checks are accepted under any circumstances. Using the Decision Table testing technique, construct a decision table for the check-cashing policy that includes all conditions and corresponding actions.	[Marks-7]	