



Daffodil International University
Department of Software Engineering
Faculty of Science & Information Technology
Midterm Examination, Fall 2024

Course Code: SE 312; Course Title: Software Quality Assurance & Testing
Teachers & Sections: SA(A,B) & NJM(A,B,C,D)
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)	Explain the key differences between verification and validation and discuss how you would approach testing a new software feature using the seven principles of testing, outlining each phase and its significance.	6	CLO-1 Level-2
	b)	You are a tester working on a project with a team of developers. After running several tests, you find a bug in the system that could cause serious issues for users. When you report the bug to the lead developer, they seem frustrated and dismissive, saying, "It's probably just a minor issue, and it's not worth delaying the release." Describe how you would handle this situation, considering the psychology of testing.	4	
2	a)	Analyzing the scenario of testing an Admission eligibility system for a university scholarship program. The system is designed to evaluate student applications based on two key criteria: Age and GPA . The Age requirement is <u>18 to 25</u> years. Anyone older than 25 is automatically disqualified. The system mandates a minimum GPA of <u>3.0</u> , The maximum GPA is capped at <u>4.0</u> . Analyze the test cases utilizing Boundary Value Analysis to ensure the correctness of event display functionality.	5	CLO-2 Level-4
	b)	You are assigned to test an ATM Machine that allows users to perform various actions depending on the state of their account and the current transaction. Website. Develop a state transition diagram to represent the various states ATM Machine such as card insertion, PIN entry, and transaction phases. Illustrate the test cases to validate the accuracy of state transitions and ensure the functionality meets the specified requirements	5	
	c)	As a Software Engineering student, you are assigned to test an <u>online shopping</u> website. The website offers a <u>discount system</u> for its <u>users</u> based on <u>three conditions</u> : user membership, total purchase amount, and whether there's an ongoing sale. The rules for applying the discount are as follows: *If the user is a <u>premium member</u> , they always get a 20% discount, regardless of other factors *If the user is a <u>regular member</u> and their purchase amount is above \$100, they get a 10% discount. *During an <u>ongoing sale</u> , all users (both <u>premium</u> and <u>regular</u>) get an additional 5% discount on <u>top of any other applicable discounts</u> . *If none of the conditions apply, <u>no discount</u> is given. Analyze the scenario to formulate comprehensive test cases utilizing a decision table based testing to test the specified conditions.	5	