



**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." <b>Describe</b> 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: <b>Age</b> and <b>GPA</b> . 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> . <b>Analyze</b> 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 <b>ATM Machine</b> 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. <b>Illustrate</b> 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. <b>Analyze</b> the scenario to formulate comprehensive test cases utilizing a decision table based testing to test the specified conditions.	5	