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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 18 to 25 years. Anyone older than 25 is automatically disqualified. The system mandates a minimum GPA of 3.0, The maximum GPA is capped at 4.0. **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 online shopping website. The website offers a discount system for its users based on three conditions: 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 premium member, they always get a 20% discount, regardless of other factors *If the user is a regular member and their purchase amount is above $100, they get a 10% discount. *During an ongoing sale, all users (both premium and regular) get an additional 5% discount on top of any other applicable discounts. *If none of the conditions apply, no discount is given. **Analyze** the scenario to formulate comprehensive test cases utilizing a decision table based testing to test the specified conditions.	5	