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Daffodil International University

Department of Software Engineering
Faculty of Science & Information Technology
Midterm Examination, Summer 2025
Course Code: SE 312; Course Title: Software Quality Assurance & Testing
Teachers & Sections: MNA, KMH, CP, FF, RRB, MTM (40A - 40I)

Time: 1 Hour 30 Mins **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 Fintech company launches a mobile wallet app with features like money transfers, bill payments, and transaction history. Although the app passed all test cycles, users soon report issues such as failed transfers, incorrect summaries, and app crashes. Investigation reveals that testers reused the same test cases repeatedly, distributed effort equally across all modules, and began testing only after full development. Stakeholders are surprised, assuming the app should be bug-free since all known defects were fixed. Based on this scenario, **Discuss** relevant software testing principles to analyze the testing issues observed.	**Marks -3**	**CLO-1** *Level-2*
	b)	A newly developed mobile banking application is ready for testing. The project manager has emphasized the use of the ISTQB Fundamental Test Process to ensure its quality and reliability. **Describe** the significance of first two phases of the ISTQB Test process in contributing to the overall success of the project.	**Marks -4**	
	c)	As a software tester, you are assigned to thoroughly test the checkout process of an e-commerce platform to ensure it functions correctly and provides a smooth, error-free experience for users. **Explain** the advantages of applying the V-Model in software testing and discuss the implications on the software development lifecycle.	**Marks -3**	
2.	***a)***	A calendar application is being developed for educational institutions in Bangladesh, featuring automated reminders of important historical dates. One of the critical requirements is to ensure accurate event display within the valid date range of August 5, 2023, to March 23, 2027. **Outline** the test cases utilizing Boundary Value Analysis to ensure the correctness of event display functionality across this specified date range.	**Marks -5**	**CLO-2** *Level-4*
	b)	A university has developed a student portal system that handles course registration, fee payment, and class attendance. The course registration module is state-dependent and transitions through several states: Not Registered, Registered, Pending Payment, Enrolled, Dropped, and Blocked. A student moves from Not Registered to Registered after selecting a course, then to Pending Payment before becoming Enrolled after paying fees. Students can Drop a course before the add/drop deadline, returning to the Not Registered state. If fees are not paid within the deadline, the student transitions to Blocked and cannot register again without administrative clearance. From the scenario, **Illustrate** the test cases to validate the accuracy of state transitions and ensure the functionality meets the specified requirements.	**Marks -5**	
	c)	As a Software Engineering student assigned to test a university's online exam clearance system, you are responsible for validating the eligibility criteria for exam enrollment. The system enforces the following conditions: • The student must have paid all fees from previous semesters. • The student must have a minimum GPA of 2.5 in the last semester. • The student must have no pending disciplinary actions. • The student must have at least 75% attendance in the enrolled courses for the semester. Analyzing the scenario **explore** comprehensive test cases using Decision Table Based Testing to verify the student's eligibility for exam registration.	**Marks -5**	