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Daffodil International University

Faculty of Science & Information Technology

Department of Software Engineering

Midterm Examination, Fall- 2026

Course Code: SE 312

Course Title: Software Quality Assurance & Testing

Sections & Teachers: (A-B, QFF) (C-AUA) (D, E, F-SA) (G-H, SIM) (I-J-SNM) (K,M-JAL) (L-FM) (N-ABS) (O-DP)

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.]

	a)	A software engineer was designing a login system with the requirement that passwords containing fewer than 8 characters must be rejected. However, due to a typing mistake, the developer wrote the following condition: if (password.length() < 5) instead of the correct condition: if (password.length() < 8). As a result, the system accepted passwords containing 6 characters, even though the minimum required length was 8 characters. i) **Explain** the main differences between error, failure and fault. ii) **Explain** the defect, failure and mistake from the given scenario.	[Marks-2+3]	CLO-1 Level-2
	b)	A software company has a testing team responsible for testing a newly developed online banking application. The team consists of testers who work closely with developers and are sometimes involved in discussions about whether reported defects should be fixed. Answer the following: i. **Discuss** two positive psychological attitudes that a good software tester should have. ii. Briefly **explain** the levels of independence in testing, with an example for each level.	[Marks-2+3]	CLO-1 Level-2
2	*a)*	An online university course registration system accepts a student's registration based on the following conditions: The age of the student must be between 18 and 60 years inclusive. Moreover, the student must register for more than 12 credit hours and less than 24 credit hours. Finally, students can register for 3–6 courses inclusive in a semester. Answer the following: i. **Point out** two differences between Weak Normal and Strong Normal Equivalence Class Partitioning.	[Marks-2+3]	CLO-2 Level-4

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	ii. **Identify** the equivalence classes for the input variables and design the required test cases using Equivalence Class Partitioning.		
b)	A university is developing an online library system to determine whether a student can borrow a book. The rules are as follows: • The student must have a valid library membership to borrow a book. • If the student is an undergraduate student, they can borrow up to three books at a time. • If the student is a postgraduate student, they can borrow up to five books at a time. • If the requested book is unavailable, the student cannot borrow it. **Contrast** the decision table from the above scenario.	**[Marks-5]**	**CLO-2 Level-4**
c)	A university is developing an online course registration system. Registered students can log in and view the list of available courses. A student can select a course and click the "Register" button to enroll in it. If seats are available and the student meets the course prerequisites, the system confirms the registration and updates the student's course list. If no seats are available or the student does not meet the prerequisites, the system displays an appropriate error message. Answer the following questions: a. **Analyze** the given scenario and develop a use case description for the Course Registration functionality. b. **Analyze** the given scenario and develop two test cases for the Course Registration functionality.	**[Marks-3+2]**	**CLO-2 Level-4**