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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/ COMMERCIAL PRACTICE, APRIL - 2025

SOFTWARE TESTING

[Maximum marks: 75] [Time: 3 Hours]

PART A

I. Answer all the following questions in one word or one sentence. Each question carries 1 mark.

(9 x 1 = 9 Marks)

		Module outcome	Cognitive level
1	List two post implementation goals of software testing.	M1.01	R
2	Define the term, "Failure".	M1.02	U
3	In general, …….. number of test cases can be designed in a module with n variables, using BVC.	M2.01	U
4	Define the term, FSM.	M2.03	R
5	……. is the process of attempting to detect the discrepancies between the functional specifications of a software and its actual behaviour.	M3.04	R
6	Name two types of interface modules which must be simulated if required at the time of unit testing.	M3.02	R
7	State when a System Under Test (SUT) is said to regress.	M3.06	R
8	Name the two types of tools for test design and development.	M4.01	U
9	List any two commercial testing tools.	M4.03	R

PART B

II. Answer any eight questions from the following. Each question carries 3 marks.

(8 x 3 = 24 Marks)

		Module outcome	Cognitive level
1	Describe the following states of a bug: (a) Open (b) Assign (c) Deferred	M1.02	U
2	Write a note on testing tactics.	M1.04	U
3	Outline any three needs of white box testing.	M2.04	R
4	A program reads an integer within the range [1, 100] and checks whether it is a prime number or not. Design testcases for this program using BVC.	M2.05	A
5	Mention the use of state tables. Explain how state tables are formed.	M2.03	U

6	State the role of different team members in inspection testing.	M3.01	R
7	List the guidelines for top down integration.	M3.03	U
8	State the objectives of regression testing.	M3.06	U
9	Outline any three challenges in testing web based systems.	M4.05	U
10	Compare static and dynamic testing tools.	M4.01	U

PART C

Answer all questions. Each question carries seven marks.

(6 x 7 = 42 Marks)

		Module outcome	Cognitive level
III	Explain the goals of software testing.	M1.01	U
	OR		
IV	Describe Software Testing Life Cycle with a neat figure.	M1.03	U
V	(a) State the purpose of Basis path testing. (b) List the applications of basis path testing.	M2.04	U
	OR		
VI	Discuss the steps in test case design using equivalence class testing.	M2.01	U
VII	A program calculates the total salary of an employee with conditions: (1) If working hours ≤8, give normal salary. (2) If working hours >8 on normal days, give 1.25 of the salary. (3) On holidays or Sundays, give 2 times of salary. Design test cases using decision table based testing.	M2.03	A
	OR		
VIII	Explain how test cases are designed for structural testing in logic coverage criteria.	M2.04	A
IX	Explain call graph based integration using a suitable example.	M3.03	A
	OR		
X	Regression testing produces quality software – Justify the statement with a neat sketch.	M3.04	A
XI	(a) State the need of integration testing. (b) Write a note on decomposition based integration.	M4.01	U
	OR		
XII	Explain how function testing detects the discrepancies between the functional specifications and the actual behaviour of the system.	M4.05	U
XIII	State the issues in testing Object Oriented software.	M4.04	U
	OR		
XIV	Illustrate the use of open source testing tool – Selenium for test automation.	M4.02	U

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