Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech S6 (Minor) Degree Examination May 2025 (2022 Admission)

Course Code: CST382

Course Name: INTRODUCTION TO SOFTWARE TESTING

Max. Marks: 100 Duration: 3 Hours

PART A

Answer all questions, each carries 3 marks. Marks

1		Explain the differences between Validation and Verification.	(3)
2		Why is unit testing typically performed by the programmer who develops the code?	(3)
3		What is meant by functional program testing?	(3)
4		Define the terms Mutation and Mutants.	(3)
5		Explain about simple path and prime path.	(3)
6		Draw the control flow graph for 'switch' and 'for' statement.	(3)
7		Explain the difference between Equivalence Class Partitioning and Boundary Value Analysis.	(3)
8		Briefly explain three techniques of Grey box testing.	(3)
9		List the three key aspects in functional testing.	(3)
10		Explain the concept of symbolic execution with the help of a toy example.	(3)

PART B

Answer one full question from each module, each carries 14 marks.

Module I

11	a)	Explain the following types of testing (i)Black Box testing (ii) White Box testing (iii) Grey Box testing (iv) Unit testing (v) Integration testing (vi) System testing (vii) Acceptance testing	(14)

OR

12	a)	Describe the characteristics of the five test process maturity levels	(10)
	b)	Design four test cases to evaluate the functionality of an 'Image Viewer' mobile application developed for Android devices, which enables users to view images stored in the phone's internal memory	(4)

Module II

13	a)	Explain about Control flow testing.	(7)

b) Explain about Data Flow testing (7)

OR

14 a) Explain dynamic test unit environment with neat diagram (7)

b) JUnit as a framework for unit testing. Explain (7)

Module III

15 a) Draw the CFG for the following two code segments. (10)

a) If (x<y)
{ y=0;
x=x+1;
}

b) x=0;
while(x<y)
{ y=f(x,y);
x=x+1;
}

b) Explain the following terms with example (4)

i) coupling du pair ii) method and call coverage

OR

16 a) Draw CFG fragment for (6)

(i) for loop (ii) Switch statement

b) Explain touring, side trips and detours with a neat example. (8)

Module IV

17 a) Explain the two approaches in input domain modelling. (7)

b) List the guidelines for performing Boundary value Analysis. (7)

OR

18 a) Domain testing is an intelligent method of testing. Justify your answer by explaining different criteria for combining multiple partitions in domain testing. (14)

Module V

19 a) Grey box testing combines the advantages of both black box and white box testing. Justify your answer. (10)

b) Explain parameterized unit testing. (4)

OR

20 a) (a) Consider the code fragment given below: - (7)

1. POWER: PROCEDURE(X, Y);
2. Z <------- 1;
3. J < ------- 1;

4. LAB: IF Y≥J THEN

5. DO; Z<--- Z*X

6. J <--- J+1;

7. GO TO LAB; END;

8. RETURN (Z) ;

9. END;

a) Explain the symbolic explanation of POWER(a1,a2)

b) Explain the execution tree for POWER(a1,a2) in the above code fragment. (7)

****