B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

June 2025 Semester End Main Examinations

Programme: B.E.   **Semester: V**
Branch: Information Science and Engineering   **Duration: 3 hrs.**
Course Code: 23IS5PCSTG   **Max Marks: 100**
Course: Software Testing

Instructions:1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

				CO	PO	Marks
			UNIT - I			
1	a)		What is software quality? Discuss different views of software quality.	CO1		**6**
	b)		Illustrate the following: i. Static Analysis ii. Dynamic Analysis iii. Verification iv. Validation	CO1		**8**
	c)		Explain how different stakeholders view a test process from different perspectives.	CO1		**6**
			OR			
2	a)		Describe test case with suitable examples.	CO1		**4**
	b)		What are all the sequence of activities to be tested by an engineer to test a program? Illustrate it with suitable diagram.	CO1		**8**
	c)		Discuss in detail: i. White-box testing and Black-box testing ii. Test planning and Test design	CO1		**8**
			UNIT - II			
3	a)		Define the following i) Error ii) fault iii) failure iv) incident	CO1		**4**
	b)		With a neat diagram explain various levels of software testing.	CO1		**6**
	c)		What is unit testing? Explain about two complementary phases of unit testing.	CO1		**10**
			OR			

	4	a)	With a neat diagram explain the steps involved in performing static code review.	CO1		10
		b)	What is Debugging and describe the three approaches to debugging?	CO1		10
			UNIT – III			
	5	a)	With a neat graphical representation, explain Normal Boundary Value testing for a function F of two variables x1 and x2. Derive the Normal boundary value test cases with x1 and x2 variables.	CO1		5
		b)	Write a neat graphical representation of Worst case Boundary value testing for a function F of two variables x1 and x2. Design Worst case Boundary value test cases(25 test cases) for a triangle problem along with expected output where sides a, b and c vary from 1-50 using Worst case Boundary value testing.	CO1		10
		c)	Design the test cases for a triangle problem along with expected output where sides a, b and c vary from 1-200 using Normal boundary value and Robust boundary value Testing.	CO2	PO1	5
			OR			
	6	a)	With neat graphical representation discuss briefly about all the variants of Equivalence Class Testing (ECT) technique for two variable functions.	CO1		10
		b)	Design the weak normal, strong normal, weak robust and strong robust equivalence class test cases for the triangle problem where sides a, b and c vary from 1-5.	CO2	PO1	10
			UNIT – IV			
	7	a)	What is the primary objective of integration testing? Describe the three common paradigms for interfacing between modules?	CO2	PO1	7
		b)	Briefly write about Junit tool, its annotations and assertions.	CO2	PO1	10
		c)	List the advantages of conducting system integration testing.	CO2	PO1	3
			OR			
	8	a)	Explain in detail the Incremental approach to perform system integration testing.	CO2	PO1	6
		b)	Give comparison between the top-down and bottom-up approaches with suitable diagrams.	CO2	PO1	8
		c)	Illustrate the framework for preparing an SIT plan.	CO2	PO1	6
			UNIT – V			
	9	a)	What is the purpose of acceptance testing? Discuss the steps involved in planning and executing a User Acceptance Testing (UAT) phase.	CO2	PO1	10

		b)	List and explain the McCall's quality factor and criteria.	*CO2*	*PO1*	**10**
			OR			
	10	a)	List and explain eight principles of ISO 9000:2000 Software Quality Standard.	*CO1*		**8**
		b)	Brief about six categories of quality characteristics under ISO 9126 standard. Give an outline for an example quality model.	*CO1*		**6**
		c)	Discuss any three real-world scenarios and examples where and how UAT is conducted to meet the business requirements and work effectively for the end-users.	*CO1*		**6**

******