Question Paper Code | **12618**

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2024
Sixth Semester
Information Technology
(Common to Fifth Semester Computer Science and Engineering)
20ITEL601 – SOFTWARE TESTING
Regulations - 2020

Duration: 3 Hours　　　　　　　　　　　　　　　　　　　　Max. Marks: 100

PART - A (10 × 2 = 20 Marks)
Answer ALL Questions

		Marks	K–Level	CO
1.	Define software testing.	2	K1	CO1
2.	Analyze the cost implications of defects in software products.	2	K2	CO1
3.	Define Equivalence Class Partitioning.	2	K1	CO2
4.	Mention the primary purpose of Requirements-Based testing.	2	K1	CO2
5.	Name one automated testing tool used for compatibility testing.	2	K1	CO3
6.	Define one key performance indicator used in performance testing.	2	K1	CO3
7.	List the characteristics of localization testing.	2	K1	CO4
8.	State a strategy for locating test items within a software system.	2	K2	CO4
9.	Identify one common challenge encountered in test automation projects.	2	K2	CO6
10.	Define the scope of automation in software testing.	2	K2	CO6

PART - B (5 × 13 = 65 Marks)
Answer ALL Questions

11. a) Evaluate the significance of the Testing Maturity Model (TMM) in improving testing processes.How does achieving higher maturity levels impact testing outcomes?　13　K2　CO1

OR

　b) Classify defect classes commonly encountered in software testing, and analyze the impact of each defect class on the software's functionality, usability, and performance.　13　K2　CO1

12. a) Compare and contrast Black Box and White Box approaches to test case design, highlighting their respective advantages and limitations.　13　K2　CO2

OR

　b) Discuss the principles of Cause-Effect Graphing and its role in generating test cases based on input-output relationships. How does it contribute to efficient test coverage?　13　K2　CO2

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

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13. a) Explain the concept of Defect Bash Elimination System Testing and how it aims to identify and address defects in software systems. *13   K3   CO3*

OR

b) Discuss the steps involved in designing Integration Tests, and explain why are they necessary in software development? Provide examples of scenarios where Integration Testing is crucial. *13   K3   CO3*

14. a) Describe the test process lifecycle, How do these phases contribute to the overall testing effort? *13   K2   CO4*

OR

b) Compare and contrast different organization structures for testing team. What are the advantages and disadvantages of each? *13   K2   CO4*

15. a) Explain the key design and architecture considerations for implementing test automation frameworks. How do modularity, scalability, and maintainability influence the design of automated test suites? *13   K2   CO6*

OR

b) Discuss the role of productivity metrics in test automation. How can metrics such as test script reuse, test execution efficiency, and defect detection rates help measure the productivity gains achieved through automation efforts? *13   K2   CO6*

PART - C (1 × 15 = 15 Marks)

16. a) You are leading a software testing team responsible for testing a new web-based application. Your team has been tasked with measuring the effectiveness of the testing efforts using various test metrics and measurements. Develop a plan to collect and analyze relevant test metrics to evaluate the quality of the testing process and the software product. *15   K3   CO5*

OR

b) Identify the role user/client play in the development of test plan for a project? Should they be present at any of the test plan reviews. Justify your answer. *15   K2   CO5*