

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL/MAY 2026*****Fifth Semester******Artificial Intelligence and Data Science*****CCS366 - Software Testing and Automation*****(Common to Information Technology & Computer Science and Engineering)******Regulations - 2021******Duration : 3 Hrs******Maximum : 100 Marks******PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)***

Q.No	Questions	BTL	CO	Marks
1.	Compare and contrast the objectives of Black-Box Testing and White-Box Testing.	L2	1	2
2.	In unit testing, what is the significance of "stub" and "driver" components, and how do they support testing?	L2	1	2
3.	Outline the roles and responsibilities of a Tester in test phase.	L2	2	2
4.	What is the purpose of using metrics and statistics in software testing?	L1	2	2
5.	Define the concept of equivalence class testing and its benefits in test design.	L2	3	2
6.	What is bug life cycle?	L2	3	2
7.	Define volume testing.	L1	4	2
8.	In mobile application testing, what is "device fragmentation," and why is it important to address?	L3	4	2
9.	Which programming languages can you use with Selenium WebDriver?	L1	5	2
10.	List any two components of test Report.	L1	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

Q.No	Questions	BLT	CO	Marks
11.	a i Explain the relationship between software failures, errors, and faults (defects) and how they impact the reliability of software systems.	L2	1	8
	ii Illustrate the fundamental software testing principles and analyze their significance in the testing process.	L2	1	8
	Or			
	b Explain the stages of testing in the context of software development. Discuss the activities involved in each stage, highlighting the importance of a systematic testing approach in ensuring software quality and reliability.	L2	1	16
12.	a Develop a tailored test strategy for a hospital appointment scheduling web application. The strategy should outline the test phases, testing objectives, and resource requirements, ensuring alignment with the unique	L3	2	16

characteristics and criticality of the healthcare domain.

Or

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| b | i | Apply your knowledge of software testing by developing a practical test schedule for an e-commerce mobile application. Your schedule should include both functional and non-functional testing phases, and provide clear justifications for the order and timing of each phase based on the app's features and expected user behavior. | L3 | 2 | 8 | |
| | ii | Construct how the key testing metrics is used to evaluate the quality of a software application. How can metrics like defect density and test coverage be used to make informed decisions about the readiness of a software product for release? | L3 | 2 | 8 | |
| 13. | a | i | Apply boundary value analysis to test a car speed monitoring system that accepts speeds between 40 km/h and 80 km/h (inclusive). The system should send a notification when the speed falls below 40 km/h or exceeds 80 km/h. Identify appropriate boundary and invalid test cases, and explain how these values help validate the system's behavior at the input limits. | L3 | 3 | 10 |
| | | ii | Apply the equivalence partitioning technique in test case design for validating a login form with username Password with proper example. | L3 | 3 | 6 |

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| b | | Construct the significance of modeling test results and their impact on the effectiveness of test documentation. How can visual representations of test results, such as graphs and charts, aid in understanding and decision-making? | L3 | 3 | 16 | |
| 14. | a | i | Analyze the primary goals of stress testing in a software development project. | L4 | 4 | 8 |
| | | ii | Analyze the importance of fail-over testing in ensuring high availability for critical applications. | L4 | 4 | 8 |

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| b | i | Compare and contrast compatibility testing and usability testing. | L2 | 4 | 8 | |
| | ii | Explain the role of penetration testing in identifying vulnerabilities and securing software applications. | L2 | 4 | 8 | |
| 15. | a | i | Analyze the potential reasons for this issue and suggest troubleshooting steps for a Selenium test script you've developed is failing to locate a specific web element consistently. | L4 | 5 | 10 |
| | | ii | Analyze in detail about different web drivers. | L4 | 5 | 6 |

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| b | | Examine the concept of packages, lead a team of testers working on a large-scale web application project. Develop a strategy for organizing classes and packages within a testing.xml file to optimize test suite management. | L4 | 5 | 16 |
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