

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***MCA DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025***Third Semester***Master of Computer Applications****MC4026 / PMCE2426 - Software Quality and Testing***Regulations – 2021 & 2024**Duration : 3 Hrs**Maximum : 100 Marks****PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)***

<i>Q.No</i>	<i>Questions</i>	<i>BTL</i>	<i>CO</i>	<i>Marks</i>
1.	State the importance of developing test cases for both valid and in valid input conditions.	L4	1	2
2.	Define software testing.	L1	1	2
3.	Name any two key element included in a test summary report.	L2	2	2
4.	If you create a set of test cases that achieve 100% coverage of the code, it ensures that the software has been tested well. Comment on this statement.	L4	2	2
5.	Name any two types of test automation frameworks.	L1	3	2
6.	What is the main objective of test process assessment?	L2	3	2
7.	State the various maturity levels of CMMI model.	L1	4	2
8.	Distinguish between quality control and quality assurance.	L4	4	2
9.	What is the role of statistical methods in ensuring software quality?	L4	5	2
10.	State any two of Deming's quality principles.	L1	5	2

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

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a i Discuss in detail about the considerations and procedure to be followed in testing the individual unit of software. Also discuss the commonly found errors during the testing.	L3	1	8
	ii Briefly explain the Top-down and Bottom-up integration testing.	L2	1	8
	Or			
	b Compare and contrast white-box testing and black-box testing. Provide scenarios where each is preferred.	L2	1	16
12.	a i Enumerate and explain the components of a test plan for an online shopping system.	L2	2	8
	ii Discuss the advantages of spiral testing over traditional linear testing methods.	L2	2	8
	Or			
	b Explain with examples how static and dynamic testing help in identifying software defects at different stages.	L4	2	16

13.	a	i	Explain the concept of test process assessment.	L2	3	6
		ii	Discuss the objectives, models (TMM/TMMi), and benefits of assessing software testing processes.	L2	3	10
			Or			
	b		Explain the role of continuous integration and continuous testing in agile projects and how does it improve software quality?	L2	3	16
14.	a	i	State the various maturity levels of MMI staged model and list the key process areas for the level 4 called "managed level".	L2	4	8
		ii	Explain the role of quality standards in software development.	L2	4	8
			Or			
	b	i	Explain the components of software quality assurance (SQA). How do these components help in maintaining process and product quality?	L2	4	8
		ii	Explain the difference between verification and validation with examples.	L2	4	8
15.	a	i	How can statistical quality control be applied to detect and reduce software defects?	L2	5	8
		ii	Discuss the importance of statistical data analysis in software project monitoring and control.	L2	5	8
			Or			
	b	i	Explain each stage of the PDCA cycle with reference to software testing.	L2	5	8
		ii	How does PDCA cycle contribute to defect prevention and continuous process improvement?	L4	5	8