Reg.No.:												

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 50032

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – JAN. 2026
Eighth Semester
Computer Science and Engineering
U19CSV54 – SOFTWARE TESTING AND QUALITY ASSURANCE
(Regulation2019)

Time: Three Hours | Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	List the levels of TMM.	2	K1	CO1
2.	What are the software Testing principles?	2	K1	CO1
3.	How black box approach is used to improve software testing efficiency?	2	K2	CO2
4.	Specify the importance of test adequacy criteria.	2	K2	CO2
5.	What are the goals of SQA?	2	K1	CO3
6.	Distinguish between quality assurance and total quality management.	2	K2	CO3
7.	Name the five maturity levels in the CMMI model.	2	K2	CO4
8.	Define the term "Baseline" in SCM.	2	K1	CO4
9.	What is cyclomatic complexity, and how is it calculated?	2	K1	CO5
10.	Differentiate between process metrics and product metrics.	2	K2	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.		Questions	Marks	KL	CO
11.	a)	Describe the process of developing a defect repository. What information should be included in a defect report, and how should defects be tracked and managed?	13	K2	CO1
		(OR)			
	b)	Explain the role of process in achieving software quality. How do different testing processes contribute to overall quality of software?	13	K2	CO1
12.	a)	Compare and Contrast differences between random testing and testing using error guessing.	13	K2	CO2
		(OR)			
	b)	Analyze the impact of using COTS components on the overall software testing process. How can testing strategies be adapted to accommodate COTS?	13	K2	CO2
13.	a)	Discuss the goals of SQA and explain its responsibilities in a software development environment.	13	K2	CO3
		(OR)			
	b)	Elaborate on Deming's 14 principles for quality improvement and their relevance in software quality management.	13	K2	CO3
14.	a)	Explain the different levels of the Capability Maturity Model Integration (CMMI) and how they contribute to software process improvement.	13	K2	CO4
		(OR)			
	b)	Explain Software Configuration Management (SCM) in detail, including its need, objectives, and benefits in software engineering.	13	K2	CO4
15.	a)	Explain Structured Engineering and Information Engineering methodologies. How do they help in systematic software development and maintenance?	13	K2	CO5
		(OR)			
	b)	Describe the methods in designing software measurement programs. Explain with suitable diagram.	13	K2	CO5

PART – C

(1 x 15 = 15Marks)

Q.No.		Questions	Marks	KL	CO
16.	a)	Programmer A and Programmer B are working on a group of interfacing modules. Programmer A tends to be a poor communicator and does not get along well with Programmer B. Due to this situation, what types of defects are likely to surface in these interfacing modules? What are the likely defect origins?	15	K4	CO1
		(OR)			
	b)	You are developing a module whose logic Impacts on data acquisition for a flight control system. Your test manager has given you limited time and budget to test the module. The module is fairly complex; it has many loops, conditional statements, and nesting levels. You are going to unit test the module using white box testing approaches. Describe three test adequacy criteria you would consider applying to develop test cases for this module. What are the pros and cons for each? Which will have the highest strength?	15	K3	CO2