Reg. No.															

Question Paper Code	13397

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2025

Eighth Semester

Computer Science and Engineering

(Common to Artificial Intelligence and Data Science)

20CSEL804 - SOFTWARE QUALITY ASSURANCE

Regulations - 2020

Duration: 3 Hours **Max. Marks: 100**

PART - A (MCQ) (10 × 1 = 10 Marks)

Answer ALL Questions

		Marks	*K – Level*	*CO*
1.	Which software quality model includes factors such as correctness, reliability, and maintainability? (a) McCall's Model (b) Boehm's Model (c) ISO 9001 Model (d) CMMI Mode	*1*	*K1*	*CO1*
2.	What does the term "Cyclomatic complexity" refer to in software quality? (a) The number of defects per module (b) The performance of the software (c) The complexity of the control flow in a program (d) The usability of the software	*1*	*K1*	*CO1*
3.	Which of the following models is commonly used in SQA for process improvement? (a) Waterfall Model (b) Capability Maturity Model Integration (CMMI) (c) Agile Model (d) V-Model	*1*	*K1*	*CO2*
4.	What is the role of SQA during the implementation phase? (a) Writing code for the project (b) Ensuring that coding standards and best practices are followed (c) Conducting system performance tests (d) Writing user manuals	*1*	*K1*	*CO2*
5.	Which of the following is a key component of configuration management? (a) Change control (b) Employee performance tracking (c) Customer satisfaction surveys (d) Warehouse inventory reports	*1*	*K1*	*CO3*
6.	What is the best practice for checklist development? (a) Making checklists overly detailed and complicated (b) Keeping them simple, clear, and logically structured (c) Avoiding updates once created (d) Writing checklists only for complex tasks	*1*	*K1*	*CO3*
7.	Process metrics help in: (a) Measuring hardware performance (b) Evaluating the efficiency and effectiveness of software development processes (c) Reducing software functionality (d) Avoiding quality assessment	*1*	*K1*	*CO4*
8.	The cost of software quality is best managed by: (a) Focusing only on defect correction (b) Investing in prevention and early defect detection (c) Reducing testing to save costs (d) Ignoring software metrics	*1*	*K1*	*CO4*
9.	How many maturity levels are defined in the CMM framework? (a) 3 (b) 5 (c) 4 (d) 6	*1*	*K1*	*CO5*
10.	What type of appraisal is used to evaluate CMMI compliance? (a) Internal audit (b) SCAMPI (c) Quality assurance review (d) External assessment	*1*	*K1*	*CO6*

PART - B (12 × 2 = 24 Marks)

Answer ALL Questions

11.	Define software quality.	*2*	*K1*	*CO1*
12.	Define contract management.	*2*	*K1*	*CO1*
13.	Why cyclomatic complexity is important?	*2*	*K1*	*CO2*
14.	List the advantages of automation testing.	*2*	*K1*	*CO2*
15.	List out the components of pre project documents.	*2*	*K1*	*CO3*
16.	Show the process of CAPA.	*2*	*K1*	*CO3*
17.	Define classic model of cost of software quality.	*2*	*K1*	*CO4*
18.	Give the objectives of quality measurement.	*2*	*K1*	*CO4*
19.	Write the role of ISO in software quality.	*2*	*K1*	*CO5*
20.	Why are software standards so important?	*2*	*K1*	*CO5*
21.	State organization of quality assurance.	*2*	*K1*	*CO6*
22.	State bootstrap methodology.	*2*	*K1*	*CO6*

PART - C (6 × 11 = 66 Marks)

Answer ALL Questions

23.	a)	Explain the three categories belonging to McCall's factor model with examples.	*11*	*K2*	*CO1*
		OR			
	b)	Describe in detail about infrastructure components for error prevention and improvement in SQA.	*11*	*K2*	*CO1*
24.	a)	Discuss the various software methodologies model and elaborate each of them.	*11*	*K2*	*CO2*
		OR			
	b)	Explain in detail about boundary value analysis with an example.	*11*	*K2*	*CO2*
25.	a)	Explain about documentation control and summarize the issues related to storage and retrieval.	*11*	*K2*	*CO3*
		OR			
	b)	Illustrate the objectives of cost of software quality measurements in brief.	*11*	*K2*	*CO3*
26.	a)	Illustrate the various services in computerized tools for project progress control with its relevant examples.	*11*	*K2*	*CO4*
		OR			
	b)	Discuss in detail about classic software quality costs model with the extended model.	*11*	*K2*	*CO4*
27.	a)	Explain the capability maturity model for process improvement in detail.	*11*	*K2*	*CO5*
		OR			
	b)	Explain the SQA project process standards in detail.	*11*	*K2*	*CO5*
28.	a)	Explain detail about SPICE Project software quality assurance in detail.	*11*	*K2*	*CO6*
		OR			
	b)	Illustrate the project management responsibilities in detail.	*11*	*K2*	*CO6*