Question Paper Code | **12389**

B.E./B.Tech - DEGREE EXAMINATIONS, NOV / DEC 2023
Third Semester
Computer Science and Engineering (Cyber Security)
20SCPC301 - SOFTWARE ARCHITECTURE AND PROJECT MANAGEMENT
(Regulations 2020)

Duration: 3 Hours   Max. Marks: 100

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

		Marks, K-Level, CO
1.	Define software project failure in brief.	*2,K1,CO1*
2.	Define Agile methodology.	*2,K1,CO1*
3.	Define the term "Software Requirements Specification (SRS)." How does a well-defined SRS contribute to the success of a software project?	*2,K2,CO2*
4.	Describe the role of UML in software development.	*2,K2,CO2*
5.	State two techniques for software project control.	*2,K1,CO3*
6.	What is the significance of identifying activities and resources in software project planning?	*2,K1,CO3*
7.	Define the terms "fault" and "failure" in the context of software testing.	*2,K1,CO4*
8.	Differentiate between verification and validation in the software testing process.	*2,K2,CO4*
9.	Differentiate between process quality and product quality in software development.	*2,K2,CO5*
10.	Differentiate between CMM and CMMI.	*2,K2,CO5*

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

11.	a)	Compare and contrast different software development life cycle models, highlighting their strengths and limitations.	*13,K2,CO1*
		OR	
	b)	Assess the suitability of Agile methodologies when compared to traditional models, emphasizing the impact of factors such as adaptability and stakeholder involvement.	*13,K2,CO1*
12.	a)	Evaluate the impact of applying OOAD principles (abstraction, modularity, specification, encapsulation, and information hiding) on the overall quality and maintainability of software systems.	*13,K3,CO2*
		OR	

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   ***12389***

b) Critically analyze the role of UML in the software development life cycle.   *13,K3,CO2*

13. a) Develop a metrics-based control plan for a software project. Discuss how metrics are collected, analyzed, and applied to control the development process.   *13,K3,CO3*

OR

b) Integrate the concepts of software project planning, estimation, risk management, and metrics-based control in a comprehensive case study.   *13,K3,CO3*

14. a) Critically analyze the roles of unit testing, integration testing, validation, and system testing in security testing.   *13,K4,CO4*

OR

b) Conduct a comparative analysis of white box and black-box testing.   *13,K4,CO4*

15. a) Propose an integrated approach that combines elements from McCall, Boehm, FURPS / FURPS+, Dromey, and ISO-9126 models to assess software quality comprehensively.   *13,K4,CO5*

OR

b) Investigate the impact of the ISO-9126 standard on the software industry. Discuss how adherence to this standard contributes to global software quality practices.   *13,K4,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Compare and contrast the advantages and limitations of decision tables, event tables, state transition tables, and Petri nets as requirement modeling techniques.   *15,K3,CO6*

OR

b) Examine the role of modularity and design patterns in enhancing software scalability and maintainability.   *15,K3,CO6*