1100CST381122102

Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S5 (Minor) Examination November 2025 (2023 Admn)

Course Code: CST381

Course Name: CONCEPTS IN SOFTWARE ENGINEERING

Max. Marks: 100 Duration: 3 Hours

PART A

(Answer all questions; each question carries 3 marks) Marks

1		What is the importance of software process models?	3
2		What is an incremental development software model?	3
3		Explain the importance of requirements. List various types of requirements.	3
4		Explain the need for software architectural styles. List out the common architectural styles in use.	3
5		Explain the notations of use case diagram with a simple example.	3
6		What are the three major types of open source licenses?	3
7		What are the various types of risks in software projects?	3
8		What is Scrum? List out the software process patterns that defines Scrum.	3
9		What are the two classes of product matrices? Explain.	3
10		Describe the different levels of Capability Maturity Model.	3

PART B

(Answer one full question from each module, each question carries 14 marks)

Module -1

11	a)	Explain waterfall model in detail with its advantages and disadvantages.	7
	b)	What is meant by agile process? Explain the principles and organisational practices of agile software development.	7
12	a)	Compare Spiral SDLC model and Prototyping model. Specify advantages and disadvantages of each. Write the applications areas where Spiral model can be used effectively.	10
	b)	What are the key challenges facing software engineering? List the issues of professional responsibility.	4

Module -2

13	a)	Explain coupling and cohesion with suitable example.	10

	b)	What are the crucial steps of requirement engineering? Explain with a diagram.	4
14	a)	Describe any three methods of requirement elicitation process.	6
	b)	What is component-based design? Describe the basic design principles applicable to component-level design.	8

Module -3

15	a)	Describe basis path testing. Illustrate with an example.	6
	b)	Explain the guidelines for conducting Formal Technical Reviews.	8
16	a)	What is black box testing? Explain the different types of black box testing strategies.	8
	b)	What is Test Driven Development (TDD)? Describe the stages of TDD.	6

Module -4

17	a)	What is software pricing? Describe the factors that affect software pricing.	7
	b)	Describe the process of Risk Management with the help of a diagram.	7
18	a)	Describe the different levels of COCOMO. A simple stand – alone software utility is to be developed in 'C' programming by a team of software experts for a computer running Linux and the overall size of this software is estimated to be 20,000 lines of code. Considering (a, b) = (2.4, 1.05) as multiplicative and exponential factor for the basic COCOMO effort estimation equation and (c, d) = (2.5, 0.38) as multiplicative and exponential factor for the basic COCOMO development time estimation equation, approximately how long does the software project take to complete?	7
	b)	What is meant by Software Configuration Management (SCM)? Describe SCM process in detail.	7

Module -5

19	a)	List out McCall's software quality factors with a diagram.	5
	b)	What is Software Process Improvement (SPI) framework? Describe the elements of SPI with a diagram.	9
20	a)	Describe Software Quality Assurance activities.	7
	b)	Differentiate between CMMI and ISO 9001-2000 quality standards.	7

***