Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
B.Tech Degree S5 (R,S) (FT/WP/PT) Examination November 2025 (2019 Scheme)

Course Code: CST309
Course Name: MANAGEMENT OF SOFTWARE SYSTEMS

Max. Marks: 100   Duration: 3 Hours

PART A
(Answer all questions; each question carries 3 marks)

		Marks
1	Outline the advantages of the incremental development model over the Waterfall model.	(3)
2	Illustrate how the process differs between agile software development and plan-driven software development.	(3)
3	Summarize the structure of an SRS document.	(3)
4	Compare functional and non-functional requirements.	(3)
5	Explain the three different variants of open licensing models.	(3)
6	Differentiate between white box and black box testing.	(3)
7	Identify the different types of risk for project development.	(3)
8	Summarize the three stages of project planning in a project life cycle.	(3)
9	Outline the elements of Software Quality Assurance.	(3)
10	Explain why microservices should have low coupling and high cohesion	(3)

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

Module - 1

11	a)	Incremental software development could be very effective for customers who do not have a clear idea about the systems needed for their operations. Justify.	(7)
	b)	Why professional software that is developed for a customer is not simply the programs that have been developed and delivered.	(7)
12	a)	You are given a project which involves many risks that are difficult to anticipate at the start of the project. Which life cycle model is best suited for the project? Justify your answer. Explain that model in detail.	(7)
	b)	Explain Agile ceremonies and Agile manifesto.	(7)

Module - 2

13	a)	Explain Personas, Scenarios, User stories, and Feature Identification.	(7)
	b)	Determine the main methods for developing a use case and draw a use case	(7)

diagram for a student management system.

14 a) What are functional and non-functional requirements? Imagine that you are developing a library management software for your college, list eight functional requirements and four nonfunctional requirements. (7)

b) Why is requirements elicitation considered a critical task in requirements engineering? Explain any two methods for requirements elicitation. (7)

Module -3

15 a) Discuss the design models and draw the sequence diagram for a hospital management system. (7)

b) Describe Continuous Integration, Delivery, and Deployment (CI/CD/CD) in DevOps Automation. (7)

16 a) Discuss the Formal Technical Review (FTR) process performed by Software Engineers. (7)

b) How do design patterns help software architects communicate the design of a complex system effectively. (7)

Module - 4

17 a) Describe the key steps involved in the project scheduling process, and what are the various methods used to visualize project schedules. (7)

b) Discuss the parameters that would be considered when calculating the cost of the software development project. (7)

18 a) Describe algorithmic cost modelling, and what challenges does it face compared to other cost estimation methods? (7)

b) Explain the Software Risk management process with the help of neat diagram. (7)

Module - 5

19 a) Describe different levels of the CMMI model. (7)

b) Explain the benefits of cloud-based software development, containers and microservices. (7)

20 a) Describe Software Process Improvement process. (7)

b) List out the metrics that are used to measure software quality. Justify how these metrics interpret the quality of the Software. (7)

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