PVP 23

Code: 23DS3503

III B.Tech - I Semester - Regular Examinations - NOVEMBER 2025

SOFTWARE ENGINEERING

(CSE - DS)

Duration: 3 hours Max. Marks: 70

Note: 1. This question paper contains two Parts A and B.
2. Part-A contains 10 short answer questions. Each Question carries 2 Marks.
3. Part-B contains 5 essay questions with an internal choice from each unit. Each Question carries 10 marks.
4. All parts of Question paper must be answered in one place.

BL – Blooms Level CO – Course Outcome

PART – A

		BL	CO
1.a)	Define Software Crisis.	L2	CO1
1.b)	List two notable changes in software development practices in recent years.	L2	CO1
1.c)	What is the requirement of Engineering Process?	L2	CO1
1.d)	What are the key responsibilities of a software project manager?	L2	CO1
1.e)	Define cohesion and coupling in software design.	L2	CO1
1.f)	State any two characteristics of a good user interface.	L2	CO1
1.g)	Define the difference between internal and external software documentation.	L2	CO1
1.h)	Differentiate between verification and validation in software testing.	L2	CO1
1.i)	What are two major benefits of using CASE tools in software development?	L2	CO1
1.j)	What is component classification in software reuse?	L2	CO1

PART – B

			BL	CO	Max. Marks
UNIT-I					
2	a)	What is the use of software development process models? Explain.	L2	CO1	5 M
	b)	Compare and contrast the Iterative Waterfall Model and the Incremental Development Model.	L2	CO1	5 M
OR					
3	a)	Describe the types of software development projects with suitable examples.	L2	CO1	5 M
	b)	Illustrate the working of the Rapid Application Development (RAD) model. What types of projects are most suited for RAD, and why?	L2	CO1	5 M
UNIT-II					
4	a)	Write short note on Requirement Specification and Requirement Validation.	L2	CO1	5 M
	b)	Compare and contrast Lines of Code (LOC) and Function Point (FP) metrics for project size estimation. In what scenarios would you prefer one metric over the other?	L4	CO4	5 M
OR					
5	a)	Requirements analysis is unquestionably the most communication intensive step in the software engineering process. Why the communication path does frequently breaks down?	L3	CO2	5 M

	b)	Explain the Basic COCOMO Model. How does it estimate effort and cost for software projects? Support your answer with examples.	L4	CO4	5 M
		UNIT-III			
6	a)	Compare and contrast the two primary approaches to software design: Function-Oriented Design and Object-Oriented Design. Discuss their key characteristics, advantages, and disadvantages	L4	CO4	5 M
	b)	Describe the Extreme Programming (XP) process. What are the key practices that differentiate XP from other agile methodologies?	L2	CO1	5 M
		OR			
7	a)	Explain the Scrum framework in detail. Describe the roles, artifacts, involved in a typical Scrum project.	L2	CO1	5 M
	b)	Discuss the characteristics of a Good User Interface (UI). Why is a well-designed UI critical for the success of a software application?	L3	CO3	5 M
		UNIT-IV			
8	a)	Describe black-box testing techniques, focusing on equivalence class partitioning and boundary value analysis.	L2	CO1	5 M
	b)	What is the ISO 9000 certification? How does ISO 9000 apply to the software industry, and how does it compare with the SEI Capability Maturity Model (CMM)?	L3	CO3	5 M

		OR			
9	a)	Describe various software quality models and the difference between product metrics and process metrics.	L2	CO1	5 M
	b)	Explain the role and importance of software documentation, distinguishing between internal and external documentation.	L2	CO1	5 M
		UNIT-V			
10	a)	Explain the characteristics of a CASE tools and their significance.	L2	CO1	5 M
	b)	Elaborate on the different software maintenance process models. How do these models help in estimating the cost and effort required for maintenance activities?	L4	CO4	5 M
		OR			
11	a)	Describe the architecture of a CASE environment. What are the key components and how do they interact to support software development and maintenance?	L2	CO1	5 M
	b)	Explain the concept of software reverse engineering in detail.	L2	CO1	5 M