BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE
(AUTONOMOUS)
II - B.Tech II-Semester Supplementary Examinations (BR23), Aug - 2025
SOFTWARE ENGINEERING
(Common to CSE, IT, CSE(AI & DS))

Time: 3 hours   Max. Marks: 70

Question Paper consists of Part-A and Part-B
*Answer ALL the question in **Part-A and Part-B***

PART–A (10X2 = 20M)

			Marks	CO	BL
1.	a)	List any two notable changes in software development practices.	(2M)	CO1	BL1
	b)	Compare the Waterfall model with the Spiral model in terms of flexibility.	(2M)	CO1	BL2
	c)	What is the purpose of a Software Requirements Specification (SRS) document?	(2M)	CO2	BL1
	d)	Explain the importance of risk management in software project management.	(2M)	CO2	BL2
	e)	Define cohesion and coupling in the context of software design.	(2M)	CO3	BL1
	f)	Describe any two characteristics of a good user interface.	(2M)	CO3	BL2
	g)	Define white-box testing. Mention one technique used in it.	(2M)	CO4	BL1
	h)	Explain the difference between black-box testing and white-box testing with an example.	(2M)	CO4	BL2
	i)	Define software reuse. Mention any one advantage of using software reuse.	(2M)	CO5	BL1
	j)	Explain the term "software reverse engineering" with a suitable example.	(2M)	CO5	BL2

PART–B (5X10 = 50M)

2	a. Explain the significant changes that have occurred in software development practices over the years.	5(M)	CO1	BL2
	b. Given a small software project, such as a student management system, choose a suitable software life cycle model and justify your choice.	5(M)	CO1	BL3

(OR)

3	a. Describe the exploratory style of software development and how it differs from structured approaches.	5(M)	CO1	BL2
	b. Apply the Agile development model to describe how requirements can evolve during the project lifecycle.	5(M)	CO1	BL3

4	a. Explain the major responsibilities of a software project manager in handling a development team.	5(M)	CO2	BL2
	b. Given a small web application project, use the COCOMO model to estimate the effort required (assume necessary parameters)	5(M)	CO2	BL3

(OR)

5	a. Describe the COCOMO model and how it helps in project estimation.	5(M)	CO2	BL2
	b. Apply risk management strategies to a scenario where a project is facing constant requirement changes.	5(M)	CO2	BL3

6	a. Explain the concepts of cohesion and coupling in software design. How do they affect the quality of a system?	5(M)	CO3	BL2
	b. Given a small online shopping application, apply the layered modular design approach to outline the architecture.	5(M)	CO3	BL3

(OR)

7	a. Describe the key characteristics of a good user interface.	5(M)	CO3	BL2
	b. Develop a simple DFD (Data Flow Diagram) for a Library Management System.	5(M)	CO3	BL3

8	a. Compare and contrast Black-box testing and White-box testing in terms of their techniques, use cases, and effectiveness. Analyze a situation where combining both would be beneficial, and justify why an integrated approach improves test coverage.	5(M)	CO4	BL4
	b.Given a scenario where a team is debugging a large application, identify appropriate program analysis tools that could be used and justify their choice.	5(M)	CO4	BL3

(OR)

9	a. Apply ISO 9000 principles to outline a basic software quality management system for a small development team.	5(M)	CO4	BL3
	b. Use Six Sigma methodology to improve the reliability of a defect-prone module in a banking application.	5(M)	CO4	BL3

10	a. Explain the role of CASE tools in the software life cycle. How do they support different development activities?	5(M)	CO5	BL2
	b. Apply a suitable maintenance process model to a legacy billing system that needs functionality upgrades and bug fixes. Justify your choice.	5(M)	CO5	BL3

(OR)

11	a. Describe the characteristics of software maintenance and its types.	5(M)	CO5	BL2
	b. Illustrate how a second-generation CASE tool can be used to automate software design and testing in a medium-sized project.	5(M)	CO5	BL3

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