JHARKHAND Rai University RANCHI

End Semester/Reappear (Semester IV) Examination May 2025

Programme: BCA
Course: Software Engineering **Full Marks: 70**
Course Code:3CCC206 **Time: 3 Hrs.**
Enrolment no. _____

Q. No.	Questions	CO	Bloom Taxonomy Category	Marks
	Section I			
1	**Short Answer type questions.**			**4 x 5 = 20**
a	What is the main advantage of using the prototyping model?	CO1	Remember	
	or			
	Briefly explain the spiral model.	CO1	Understand	
b	Explain the importance of the quality attributes of a good SRS. Name any four quality attributes.	CO2	Remember	
	or			
	What are the main activities involved in the requirements elicitation and analysis process?	CO2	Remember	
c	Define process metrics and explain their importance in software engineering.	CO3	Understand	
	or			
	What are the main objectives of conducting White Box Testing? Describe at least two techniques used in White Box Testing.	CO3	Understand	
d	Explain the importance of design quality in software engineering.	CO4	Remember	
	or			
	Write the sequence diagram for restaurant system.	CO4	Apply	
	Section II			
	Long Answer type questions.			**3 x 10 = 30**
2	Explain the steps involved in the prototyping model. When is it most beneficial to use this model?	CO1	Understand	
	or			
	Explain the Spiral Model in software development and describe how it integrates aspects of both design and prototyping throughout its iterative stages.	CO1	Understand	
3	Define requirement engineering. Explain the role of a requirements engineer.	CO2	Remember	
	or			
	Draw and explain a Data Flow Diagram (DFD) for a Library Management System.	CO2	Apply	
4	Illustrate the various stages of the software design process. How do you ensure design quality throughout these stages?	CO4	Understand	
	or			
	Describe the differences between a sequence diagram and a collaboration diagram in UML.	CO4	Analyze	
	Section III			
	Application based questions			**1 x 20 = 20**
5	a.Explain the interdependence between quality planning and quality control, and analyze how these processes collectively enhance the overall quality of a software product.	CO3	Analyze	
	b. Outline the key stages in the software project estimation process and discuss the importance of each step in ensuring accurate and effective project planning.			
	or			
	Explain the COCOMO Model and its project classifications. Given a software project estimated at 600 KLOC, determine the effort and development time for each of the three modes of COCOMO.	CO3	Analyze	

Project	a_i	b_i	c_i	d_i
Organic	2.4	1.05	2.5	0.38
Semidetached	3.0	1.12	2.5	0.35
Embedded	3.6	1.20	2.5	0.32

COURSE OUTCOME

CO1 Decompose the given project in various phases of a lifecycle.
CO2 Choose appropriate process model depending on the user requirements.
CO3 Perform various life cycle activities like Analysis, Design, Implementation, Testing and Maintenance.
CO4 Apply the knowledge, techniques, and skills in the development of a software product.