

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION SP/2025)

CLASS: BCA
BRANCH: BCA

SEMESTER: IV
SESSION: SP/2025

SUBJECT: CN221 SOFTWARE ENGINEERING

TIME: 02 Hours

FULL MARKS: 25

INSTRUCTIONS:

1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates

		CO	BL
Q.1(a)	Explain the concepts of software, software engineering, and software engineer.	[2]	1 2
Q.1(b)	Compare and contrast the classical Waterfall Model and the Iterative Waterfall Model based on their flexibility, feedback mechanisms, and suitability for different types of projects.	[3]	2 4
Q.2(a)	What are the key differences between Programs and Software Products? Explain with examples.	[2]	1 2
Q.2(b)	Describe the key characteristics of the Spiral Model and explain how it manages risks compared to other software life cycle models.	[3]	2 4
Q.3(a)	What are the key responsibilities of a software project manager in software development?	[2]	5 2
Q.3(b)	A software project is estimated to have 50,000 Lines of Code. The development team follows the Basic COCOMO Model for estimation. Calculate the estimated effort and determine the estimated development time based on the calculated effort, where $a = 2.4$, $b = 1.05$, $c = 2.5$, $d = 0.38$.	[3]	5 3
Q.4(a)	What is the purpose of requirement gathering and analysis in software development?	[2]	3 2
Q.4(b)	Describe the key components of a software requirements specification document.	[3]	3 2
Q.5(a)	Explain the key characteristics of a good software design and how it contributes to software maintainability and scalability.	[2]	4 4
Q.5(b)	Differentiate between cohesion and coupling in software design. Why is high cohesion and low coupling preferred?	[3]	4 2,4

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