

- 7 MAR 2025 (A)

NCU/FRM/2.6/ACAD/027

	Question paper for Minor Test		Review Date:
	School of Engineering & Technology		Session: Jan-June 2025
	Programme: MCA		Maximum Marks: 50
	Course Name: Software Project Management		Duration: 1.5hrs
	Course Code: MCL 601		Sheet 1 of 2
	Semester: Even, 2th Sem		

Note:

1. All the questions are compulsory.
2. Marks and COs are indicated against the questions.

Course Outcomes (COs)

After the successful completion of this course, students will

CO 1-Be able to identify suitable process models for particular software development.

CO 2 -Have better understanding for the preparation of SRS and of designing approaches.

CO 3- Be able to prepare the design document based on either of the methodologies.

SECTION A (14 marks)

Q. No.	Question	Marks	CO's
Q1.	Discuss the key steps involved in the requirement analysis process.	2 Marks	CO2
Q2.	Discuss the key elements that comprise of a user story and explain their importance in capturing user requirements effectively. Outline the typical format of a user story and how it contributes to collaboration between development teams and stakeholders.	4 Marks	CO1
Q3.	How do 'extend' and 'include' relationships in use case diagrams contribute to the modularity and reusability of system functionalities?	4 Marks	CO3
Q4.	Explain how the Spiral Model ensures systematic risk assessment at each phase while providing flexibility in software development.	4 Marks	CO1

SECTION B (28 marks)

Q5.	As remote work becomes the norm, a software development company has adopted the Scrum methodology to enhance project management and team collaboration. With distributed team members working from different locations, the company aims to maintain efficiency, communication, and agility in its development processes. a) How does implementing Scrum methodology help a software development team adapt to remote work environments while ensuring productivity and collaboration? b) What challenges might arise in applying Scrum in a remote setting, and what technological solutions can be leveraged to strengthen Scrum practices and uphold agile principles?	7 Marks	CO1
Q6.	Design a class diagram for a polio eradication management system. Identify	7 Marks	CO2

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	and define key classes such as 'Patient,' 'Healthcare Worker,' 'Vaccination Center,' 'Vaccine Dose,' 'Schedule,' and 'Record.' Specify the attributes and methods for each class, along with the relationships between them. Include associations such as patient-vaccination tracking, healthcare worker assignments, and vaccination scheduling. Consider inheritance or aggregation relationships where appropriate to model the system effectively. Finally, explain how your class diagram facilitates efficient coordination of vaccination.		
Q7.	Explain the Software Development Life Cycle (SDLC) and its various phases. Discuss how each phase contributes to the successful development of a software system. Additionally, analyze the importance of selecting an appropriate SDLC model based on project requirements and constraints. Provide examples of scenarios where different SDLC models, such as Waterfall, Agile, or Spiral, would be most suitable.	7 Marks	CO1
Q8.	Design an E-R Diagram for the Mahakumbh event, illustrating key entities such as Pilgrim, Temple, Event, Accommodation, Volunteer, Security, Transport, Medical Camp, and Donation along with their attributes and relationships. The diagram should depict interactions like pilgrim participation in events, accommodation booking, volunteer assignments, security deployment, transportation scheduling, and medical assistance, ensuring a comprehensive representation of the event's management system.	7 Marks	CO2
SECTION C (8 marks)			
Q9.	Develop a Data Flow Diagram (DFD) for the election process in India, starting with a context-level diagram to provide an overview of the electoral system's functionality. Then, create a Level 1 DFD that details key processes, data stores, and data flows involved in voter registration, candidate nomination, voting, result counting, and verification. Ensure that all relevant entities, such as the Election Commission, voters, candidates, and polling officers, are appropriately represented. Assume additional details as necessary.	8 Marks	CO3

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