

TILAK MAHARASHTRA VIDYAPEETH, PUNE
MASTER OF COMPUTER APPLICATIONS (MCA)
EXAMINATION : MAY/JUNE - 2026
SEMESTER - I
Sub : Software Engineering (MCA24 -105)

Date : 4/06/2026**Total Marks : 60****Time: 10.00 am To 12.30 pm**

Instruction:

1. All questions are compulsory unless and otherwise stated.
2. Bold figures to the right of every question are the maximum marks for that question.
3. Candidates are advised to attempt questions in order.
4. Answers written illegibly are likely to be marked zero.
5. Use of scientific calculators, Log tables, Mollier Charts is allowed.
6. Draw neat and labelled diagram wherever necessary.

Q. 1. Answer the following in 2-3 lines. (Any 5) (10)

1. What is the purpose of requirement analysis in software development?
2. Describe the role of Packages in UML?
3. List the characteristics of good SRS.
4. What is the purpose of a component and deployment diagram?
5. List the four quadrants of the Spiral Model
6. Differentiate between functional and nonfunctional requirements
7. What are principles of modeling

Q. 2. Answer the following in short. (Any 4) (20)

1. Explain the use of a Class-Relationship Diagram (CLD). Differentiate a CLD from an ERD
2. Draw sequence diagram to enrol for online course
3. Describe various fact-finding techniques that a system analyst can use to gather information for a new software project
4. Explain different types of "Relationships" in UML
5. Discuss Decision Analysis Tools. Explain and illustrate the structure and application of both Decision Tables and Decision Trees for modeling complex business logic.
6. Design a state chart diagram for a traffic light system. Explain the different states and transitions

Q. 3. Answer the following in detail. (Any 3) (30)

1. Explain the following: i. RAD model ii. Prototyping model.
 2. Design a set of UML diagrams (use case, class diagram, sequence diagram) for a mobile banking application
 3. Explain the object-oriented concepts
 4. Explain a Data Flow Diagram (DFD) with its components. Draw a Level 0 and Level 1 DFD for an "Online Shopping System"
 5. Describe the process of creating a software requirement specification document for library management system
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