

TILAK MAHARASHTRA VIDYAPEETH, PUNE
MASTER OF SCIENCE (M.SC) IN COMPUTER APPLICATIONS
EXAMINATION: JUNE - 2025

SEMESTER - I

Sub : Software Engineering (MCA24-105)

Date : 11/06/2025

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 software requirements gathering?
2. What is a software specification document?
3. What is a software development model? List few examples.
4. What is the Software Development Life Cycle (SDLC)?
5. What is a bug in software development?
6. What is the purpose of software testing?
7. What are the main types of UML diagrams?

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

1. What is an association in a class diagram?
2. What are the limitations of using UML in system design?
3. What is the difference between functional and non-functional requirements?
4. What are the advantages of the Spiral model?
5. What is a design pattern in software engineering?
6. What is the Agile methodology, and how is it different from the Waterfall model?

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

1. Design a component diagram for an Online Ticket Booking System, including a payment module.
2. How can UML diagrams be used to validate system requirements?
3. Create an activity diagram for the Cash Withdrawal Process in an ATM system.
4. What is the difference between waterfall and iterative development?
5. Design a state diagram for the behavior of a Traffic Light Controller.
