

K. J. Somaiya Institute of Technology, Sion, Mumbai-22
(Autonomous College Affiliated to University of Mumbai)

Nov – Dec 2025

(B. Tech / M. Tech.) Program: B. Tech Scheme I/II/IIB/III: III

Regular/Supplementary Examination: SY Semester: III

Course Code: ITC305 and Course Name: Software Engineering

Date of Exam: 04/12/2025

Duration: 02.5 Hours

Max. Marks: 60

Instructions:

(1) All questions are compulsory.

(2) Draw neat diagrams wherever applicable.

(3) Assume suitable data, if necessary.

Q. No.	Question	Max. Marks	CO	BT level
Q 1	Solve any two questions out of three: (05 marks each)	10		
a)	Explain different types of software.		CO1	U
b)	Explain waterfall software development model.		CO2	U
c)	Explain the difference between functional and non-functional requirements.		CO3	U
Q 2	Solve any two questions out of three: (05 marks each)	10		
a)	Design sequence diagram for online shopping website.		CO4	CR
b)	Design class diagram for library management system.		CO4	CR
c)	Differentiate between White Box and Black Box Testing based on their techniques, objectives, and effectiveness.		CO6	AN
Q.3	Solve any two questions out of three. (10 marks each)	20		
a)	i) Explain the benefits of software engineering. ii) Explain the features of java language.		CO1	U
b)	Explain Spiral software development model with neat labeled diagram. Describe advantages, disadvantages and application.		CO2	U
c)	Analyze the Software Requirements Specification (SRS) of Library management System.		CO3	AN
Q.4	Solve any two questions out of three. (10 marks each)	20		
a)	Draw component based diagram, use case diagram for online banking system.		CO4	CR
b)	i) Explain different collaborative UML tools. ii) Explain advanced features in UML tools.		CO5	U
c)	Compare manual and automatic software testing with its type and example.		CO6	AN
