

# Nirma University

Institute of Technology

Class Test Examination, September 2021

B. Tech in Computer Science & Engineering, Semester V

2CS504: Software Engineering

Roll/  
Exam No

Supervisor's initial  
with date

Time: 1 Hour 15 Minutes

Max Marks: 35

Instructions:

- i) *Attempt all questions.*
- ii) *Figures to the right indicate full marks.*
- iii) *Draw neat sketches wherever necessary.*
- iv) *Assume necessary data wherever required.*

- Q.1 Do as directed:** [09]
- A** Suggest three stakeholders for library management system and classify them as per their corresponding viewpoints along with justification. (3)
- B** “It is important to make a distinction between developing the user requirements and developing system requirements in the requirements engineering process.” Justify with appropriate example. (3)
- C** Write a set of three non-functional requirements for the ticket issuing system, setting out its expected reliability and its response time (3)
- Q.2 Do as directed:** [12]
- A** You have been appointed as a project manager within a software company. Your job is to manage the development of the next generation version of widely used application for cricket updates, scores, news etc. Because competition is intense in the market, tight deadlines have been established and announced. Which process model would you choose and why? (2)
- B** You have been appointed as a project manager within a software company. Your job is to build an application that is quite similar to others your team has built in the past, although this new one to be built is larger and more complex system compared to the ones your team developed in past. Requirement have been documented thoroughly for the new system to be developed. Which process model would you choose and why? (2)
- C** Explain with suitable example, the types of software development for which the spiral model is suitable. Is the number of loops of the spiral fixed for different development projects? If not, explain how the number of loops in the spiral is determined. (4)

- D** Categorize following process models into prescriptive/evolutionary model (4)  
and justify your choice:
1. Incremental model
  2. Rapid application development model
  3. Spiral model
  4. Prototype model

**Q.3 Do as directed:** (14)

- A** Consider the system banking management system. Perform the following (6)  
for the said system:

1. Identify and classify two risks.
2. Analyze the identified risks.
3. Provide contingency plan for the same.

- B** A project consists of 8 activities named A to H. Consider the following table: (8)

Activity	Completion time (in days)	Immediate predecessor activities
A	5	-
B	7	-
C	6	-
D	3	A
E	4	B, C
F	2	C
G	6	A, D
H	5	E, F

1. Construct activity network so as to satisfy the scheduling requirements shown in the table.
2. Find the least time required to complete the whole project.
3. Calculate free float time of each activity and based on that calculate the critical path.
4. How is the project completion time affected if:
  - a) activity E is delayed by 3 days
  - b) activity F is delayed by 3 days

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