

C10-R4 : SOFTWARE SYSTEMS

NOTE :

1. Answer question 1 and any FOUR questions from 2 to 7.
2. Parts of the same question should be answered together and in the same sequence.

Total Time : 3 Hours

Total Marks : 100

1. (a) Differentiate between Agents Oriented Vs. OO Software Development.
(b) What role UML plays in the software architectures ?
(c) What is the difference between functional testing and structural testing ?
Give example.
(d) What information is conveyed by the State Transition Diagram ? Discuss through
an example.
(e) Describe the role of Use case Scenarios in the software development process.
(f) Explain the advantage of using Spiral Model over Waterfall Model for software
development process.
(g) Why requirements engineering is so crucial in the software application
development ? (7x4)

2. (a) Define DFD and give its significance in System modelling. Differentiate between
physical DFD and logical DFD. Give example of each.
(b) Design a level-1 DFD for a small video rental store. Identify and describe the
main processes, data stores, and data flows involved in the system. Include
external entities and highlight the interactions between them at this detailed level. (9+9)

3. (a) Draw the Use case diagram for Online Reservation system. Highlight all use
cases, actors, system boundaries, relationships among uses cases and actors.
(b) Develop State Chart of Bank ATM Machine. (9+9)

4. (a) "Architectural Languages are very crucial to describe the interactions among the
components of software architecture." Explain.
(b) What do you mean by Software Reliability ? What are the key features of software
reliability ? What factors affect the software reliability ? Explain. (9+9)

5. (a) What are the elements of Multi Agent System ? Explain.
(b) Explain the role of software architect in the software development. (9+9)
6. (a) What is the Entity Relationship Diagram (ERD) ? Explain the crucial role ERD play in the software development. How it is different from Data flow model and Control flow model ?
(b) What is the difference in the Test Suit and Test Cases ? What is the need of test case generation ? (9+9)
7. Write short notes on **any three** :
(a) Formal Specification
(b) Software Re-Engineering
(c) User Oriented Design
(d) Object Oriented Metrics
(e) Review Techniques (3x6)

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