Sl. No.

C10-R4 : SOFTWARE SYSTEMS

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

Time: 3 Hours   Total Marks: 100

1. (a) What is the layered technology in software engineering ? Explain various layers of Software Engineering.

(b) What are the advantages of evolutionary process model for Software Engineering?

(c) What is Software Quality Assurance (SQA) ? What is importance of Software Quality Assurance (SQA)?

(d) What is Spiral Model? Write advantages and disadvantages of Spiral model and discuss. Justify   "Spiral Model is Meta Model".?

(e) What are the characteristics of software? Explain, why software doesn't wear out?

(f) What do you mean by term data dictionary? Explain purpose of it in Software Design.

(g) How Code Walk through is differing from Code Inspection?   **(7x4)**

2. (a) What is SRS? Explain characteristic of good SRS Document.

(b) What do you mean by software Quality? Discuss factors that affect software quality.

(c) What are the attributes and principles of a good software design?   **(6+6+6)**

3. (a) What is Software Testing? Differentiate Software Testing Methods Black Box and White Box Testing with their advantages and disadvantages. Explain techniques for Black Box Method with example.

(b) What is objective of User-Interface design? List and explain standard guideline for GUI design.

(c) Explain Functional and Nonfunctional requirements with example.   **(8+6+4)**

4. (a) What is SDLC ? List and Explain various phases of System Development Life Cycle.

(b) Draw Use Case Diagram of Library Management system.

(c) What is UML? List and explain various model used in UML.   **(6+4+8)**

5. (a) What is Architectural Description Language? Explain requirements to become ADL. What are advantages and disadvantages of ADL?

(b) What is Object Oriented Modeling? Describe static and dynamic modeling in detail.

(c) What is V&V of Software? Differentiate between Validation and Verification of Software System. **(6+6+6)**

6. (a) The library management system should be able to handle requests for membership, issue and return of books as well as handle purchase of books from the suppliers. Draw a context level Data Flow Diagram (DFD) and level-0 Data Flow Diagram for a Library Management System.

(b) What is ER Diagram? Explain various symbols of it. Draw ER Diagram of any problem with example. **(9+9)**

7. (a) Develop Use case diagram and Class Diagram of "Online Shopping System"

(b) Develop State Chart of Bank ATM Machine. **(12+6)**

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