

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) Differentiate validation and verification.
- b) Compare agent oriented software development and object oriented software development.
- c) When we use the UML to develop a design, normally we have to develop which two kinds of design model?
- d) *"Patterns and Pattern Languages are ways to describe best practices, good designs, and capture experience in a way that it is possible for others to reuse this experience."*- Given statement is true/false? Justify your answer.
- e) Why MTBF is a more useful metric than defects/KLOC?
- f) Which are the benefits from software reengineering rather than software replacement?
- g) Explain various software engineering layers.

(7x4)

2.

- a) State diagram is one of the diagrams of UML. With the help of a suitable example of state diagram, explain the terms: state, transition and event.
- b) Explain SDLC with all its different phases.
- c) Explain three different types of user testing.

(6+6+6)

3.

- a) Compare the Object-Oriented approach with Module Oriented approach.
- b) Write a short note for a process model which is particularly useful when staffing is unavailable for a complete implementation by the business deadline that has been established for the project.
- c) Prepare Data Flow Diagram for Library Management System also give the problem statement and define the scope.

(6+6+6)

4.

- a) Distinguish: White Box Testing and Black Box Testing.
- b) List out the activities followed during software reengineering process.
- c) Explain logical, process, development and physical views in reference to Software Architecture view models.

(6+6+6)

5.

- a) Explain Functional and Non-Functional requirements using example.
- b) Explain software reusability. Discuss the possibility of software reusability on different levels.
- c) Draw the diagram for structure of analysis model. Explain relationship between data objects, cardinality and modality with example with respect to Data Modeling.

(6+6+6)

6.

- a) What is the significance of Graphical User Interface (GUI) in input and output design of a system? Describe characteristics of good user interface design.
- b) Explain Include, Extend and Uses relationship in Use case diagram with example.
- c) Write a short note on the MOOD Metrics Suite.

(6+6+6)

7.

- a) Elaborate the concepts of Coupling and cohesion in reference to modular design approach.
- b) Explain feasibility study.

(9+9)