

No. of Printed Pages : 4

Sl. No.

C10-R4 : SOFTWARE SYSTEMS

DURATION : 03 Hours

MAXIMUM MARKS : 100

Roll No. :

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Answer Sheet No. :

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Name of Candidate : _____ ; **Signature of Candidate :** _____

INSTRUCTIONS FOR CANDIDATES :

- Carefully read the instructions given on Question Paper, Answer Sheet.
- Question Paper is in English language. Candidate has to answer in English Language only.
- Question paper contains Seven questions. The Question No. 1 is compulsory. Attempt any FOUR Questions from Question No. 2 to 7.
- Parts of the same question should be answered together and in the same sequence.
- Questions are to be answered in the ANSWER SHEET only, supplied with the Question Paper.
- Candidate cannot leave the examination hall/ room without signing on the attendance sheet and handing over his/her Answer Sheet to the Invigilator. Failing in doing so, will amount to disqualification of Candidate in this Module/Paper.
- After receiving the instruction to open the booklet and before answering the questions, the candidate should ensure that the Question Booklet is complete in all respects.

DO NOT OPEN THE QUESTION BOOKLET UNTIL YOU ARE TOLD TO DO SO.

1.
 - (a) What do you understand by the term Prototype in Software development ? Explain.
 - (b) Define role of Architecture Description Languages (ADLs) in the software development.
 - (c) Differentiate between Alpha Testing and Beta Testing.
 - (d) What information is conveyed by the Activity Diagram ?
 - (e) Describe the role of Use case Description/Narrative in the Software Development Process.
 - (f) "A Spiral model of software development is also referred to as Meta Model". Justify the statement with an example.
 - (g) List all the umbrella activities in Software Engineering Process with an example. (7x4)
2.
 - (a) What is Data Flow Diagram ? Describe the significance of DFD in System Modelling. How will you differentiate between Physical DFD and Logical DFD ?
 - (b) Design a level-1 DFD for a Food Ordering System Example. 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 detailed level. (9+9)
3.
 - (a) Draw the Use case diagram for Online Shopping System. Highlight all use cases, actors, system boundaries, relationships among use cases and actors.
 - (b) Develop State Chart of Software Vending Machine. Also explain the components of diagram. (9+9)
4.
 - (a) Explain the important characteristics of Safety Critical Software.
 - (b) Why is the concept of software reliability so important in the process of Software Development ? Give the main key features required for making a reliable software. (7+11)
5.
 - (a) Explain the approach of Software Development called Component-Based Software Engineering (CBSE).
 - (b) "UML plays a very important role in the development of Software Systems" Explain. (9+9)

6. (a) Define an Entity Relationship Diagram (ERD). Explain the crucial role ERD play in the software development ? What will be ERD components in a University system. Explain.
- (b) What is the need of Data Dictionary in the development of Software Systems ?
- (c) Differentiate between White Box and Black Box testing techniques. **(9+5+4)**
7. Write Short notes on **any three (3)** :
- (i) Algebraic specification
- (ii) Software Reusability
- (iii) Function Oriented Design
- (iv) Dynamic Model
- (v) Component Diagram **(6+6+6)**

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SPACE FOR ROUGH WORK