

**MASTER OF COMPUTER APPLICATION
FOURTH SEMESTER
SOFTWARE ENGINEERING
MCA-402**

(Use separate answer scripts for Objective & Descriptive)

Duration : 3 hrs.

Full Marks : 70

(PART-A : Objective)

Time : 20 min.

Marks : 20

Choose the correct answer from the following:

1x20=20

1. In Data Flow Diagram, an originator or receiver of data is usually designed by:
 - a. Arrow
 - b. Rectangle
 - c. Circle
 - d. Square Box
2. In Data Flow Diagram, a parallel-lines symbol:
 - a. is a data store, data at rest or a temporary repository of data.
 - b. represents the process.
 - c. represents a source or destination of system data.
 - d. none of these.
3. Which of the following would not be a major deliverable of the structure system analysis phase?
 - a. Prototype model
 - b. Data Flow Diagrams
 - c. Entity Relationship diagram
 - d. Data dictionaries
4. Who writes the Software Requirement Specification Documents (SRS)?
 - a. System Developer
 - b. System Tester
 - c. System Analyst
 - d. None of these
5. Software engineering primarily aims on:
 - a. Reliable software
 - b. Cost effective software
 - c. Reliable and cost effective software
 - d. None of these
6. Acceptance testing is done by:
 - a. Developers
 - b. Customers
 - c. Testers
 - d. None of these
7. UML stands for:
 - a. Uniform Modeling Language
 - b. Unified Modeling Language
 - c. Unit Modeling Language
 - d. Universal Modeling Language
8. Prototyping is used to:
 - a. test the software as an end product.
 - b. expand design details.
 - c. refine and establish requirements gathering.
 - d. none of these.
9. A COCOMO model is:
 - a. Common Cost Model
 - b. Constructive Cost Model
 - c. Complete Cost Model
 - d. Comprehensive Cost Model

10. The approach to software testing is to design test cases to:
- break the software.
 - understand the software.
 - analyze the design of sub processes in the software.
 - analyze the output of the software.

11. Temporal cohesion means:
- Cohesion between temporary variables
 - Cohesion between local variables
 - Cohesion with respect to time
 - Coincidental cohesion

12. Context diagram explains:
- the overview of the system
 - the internal view of the system
 - the entities of the system
 - none of these

13. Software project planning involves _____ estimation.
- Software scope
 - Resource (hardware)
 - Resource (software components)
 - All of these

14. _____ is present in spiral model.
- Code generator
 - Risk analysis
 - Code optimizer
 - Re-engineering

15. Top-down design does not require:
- Step-wise refinement
 - Loop invariants
 - Flow charting
 - Modularity

16. Top management is more interested in:
- Day to day operation
 - Strategic decisions
 - Tactical decisions
 - All of these

17. Basis path testing is:
- Both Black and White box
 - White box testing method
 - Black box testing method
 - Can't say

18. Level-0 DFD similar to:
- Use case diagram
 - Context diagram
 - System diagram
 - None of these

19. When two modules refers to the same global data area, they are related as:
- External coupled
 - Data coupled
 - Content coupled
 - Common coupled

20. Regression testing is primarily related to:
- Functional testing
 - Data flow testing
 - Development testing
 - Maintenance testing

(PART-B : Descriptive)

Time : 2 hrs. 40 min.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

- What do you mean by life cycle model of software development? Why is it important to adhere to a life cycle model during the development of a large software product? Give the major phases of the classical water fall model. 2+3+5=10
- What is a system? What are the constraints of a system? Explain the elements of a system. 2+3+5=10
- Using suitable examples, explain the different types of requirements problems that should be identified and resolved during the requirements analysis activity. Why is the SRS document also known as the black -box specification of a system? 8+2=10
- How are the risks associated with a project handled in the spiral model of software development? Explain why the spiral life cycle model is considered to be a meta model. 7+3=10
- What do you understand by the term "top-down decomposition" in the context of function-oriented design? Also differentiate between structured analysis and structured design in the same context. What is DFD? 5+2+3=10
- What is testing? Explain unit testing, integration testing and system testing. What is the difference between black-box testing and white box testing? 2+3+5=10
- What do you mean by the term software reverse engineering? Why is it required? Explain the different activities undertaken during reverse engineering. 2+2+6=10
- What are the different categories of software development projects according to the COCOMO estimation model? Explain each of them. 4+6=10

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