18368

BRAINWARE UNIVERSITY

Term End Examination 2025-2026
Programme – M.Tech.(CSE)-2025
Course Name – Software Engineering
Course Code - MTS10404
(Semester I)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A
(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Select the model ideal for rapid application development.
a) Waterfall b) RAD
c) Spiral d) Prototype

(ii) Select the model that emphasizes risk analysis.
a) Prototype b) RAD
c) Spiral d) Incremental

(iii) Select the feasibility that determines cost-effectiveness.
a) Technical b) Economic
c) Social d) Operational

(iv) Select the estimation model based on LOC.
a) Function Point b) PERT
c) COCOMO d) Delphi

(v) Select the correct representation of system boundaries.
a) Class Diagram b) DFD
c) State Chart d) ER Diagram

(vi) Choose the factor not considered in feasibility study.
a) Technical b) Operational
c) Social d) Algorithmic

(vii) Identify the model used when requirements are unclear.
a) RAD b) Prototype
c) Waterfall d) Incremental

(viii) Select the correct component of an ER diagram.
a) Process b) Flow
c) Relationship d) State

(ix) Choose the document created before design phase.

a) SRS
b) Test Plan
c) Implementation Plan
d) User Manual

(x) Identify the diagram that shows control flow.

a) Class Diagram
b) Activity Diagram
c) Sequence Diagram
d) ER Diagram

(xi) Select the notation to represent process logic.

a) Decision Table
b) Sequence Diagram
c) Activity Diagram
d) ER Diagram

(xii) Choose the type of cohesion based on shared purpose.

a) Functional
b) Logical
c) Coincidental
d) Temporal

(xiii) Identify the property that defines module interdependency.

a) Cohesion
b) Coupling
c) Encapsulation
d) Inheritance

(xiv) Select the tool that helps in cost estimation.

a) COCOMO
b) PERT
c) ER Diagram
d) Use Case

(xv) Choose the maintenance type used to enhance performance.

a) Corrective
b) Adaptive
c) Preventive
d) Perfective

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Define Software Engineering. (3)
3. Describe the objectives of Software Engineering (3)
4. Describe the impact of Spiral Model. (3)
5. Explain the impact of software maintenance. (3)
6. Explain the difference between physical and logical DFDs (3)

OR

Explain the purpose of SRS in Software Engineering. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Write down the stages of the software development life cycle (SDLC) and their purpose. (5)
8. Compare and contrast functional and non-functional requirements in software development. (5)
9. Distinguish between functional testing and non-functional testing in software quality assurance, and provide examples of each. (5)
10. Explain the advantages of software development life cycle models over exploratory style of software development. (5)
11. Illustrate top-down and bottom-up integration testing strategies with diagrams. (5)
12. Differentiate between debugging and testing in the software development process. (5)

OR

Explain the concept of unit testing in software development and its role in code quality. (5)

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