BRAINWARE UNIVERSITY

Term End Examination 2024-2025
Programme – MCA-2022/MCA-2023
Course Name – Software Engineering using UML
Course Code - MCA302
(Semester III)

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. Choose the correct alternative from the following :   1 x 15=15

(i) Which model is also known as Verification and validation model?
   a) Waterfall model
   c) V- Model
   b) Big Bang model
   d) Spiral Model

(ii) Which is not a characteristic of SRS?
   a) Verifiable
   c) Black Box View
   b) Detailed View
   d) Traceable

(iii) Name that is not a type of SDLC Model?
   a) Waterfall Model
   c) Capability Maturity Model
   b) Prototype Model
   d) Spiral Model

(iv) Identify the model that covers Risk analysis.
   a) Evolutionary
   c) Waterfall
   b) Spiral
   d) Prototype

(v) The purpose of the Prototyping model is _____ .
   a) End user understanding and approval
   c) Testing is not required
   b) Understanding program logic
   d) Covering Risk analysis

(vi) Select one that does not belong to the same category.
   a) Function Point
   c) COCOMO
   b) LOC
   d) Feature point metrics

(vii) Select the another name of Black box testing.
   a) glass box testing
   c) structural testing
   b) Functional testing
   d) none of these

(viii) Identify the category of Alpha and Beta Testing.
   a) Acceptance Testing
   c) Unit Testing
   b) System Testing
   d) Integration Testing

(ix) Identify the following non-business goal of re-engineering.
   a) Cost reduction
   b) Time reduction

c) Maintainability   d) None of the mentioned

(x) The detailed study of an existing system is referred to as_____.

   a) Feasibility study   b) System design
   c) System Analysis   d) System Testing

(xi) In the Analysis phase, the development of the _____ occurs, which is a clear statement of the goals and objectives of the project.

   a) Documentation   b) Flowchart
   c) Program specification   d) Data flow diagram

(xii) Which of the following is/are the valid relationships in Use Case Diagrams?

   a) Generalization   b) Component
   c) System   d) All of the mentioned

(xiii) Considering the example of issue/return of a book, cataloging etc. in a library management. What type of management requirement is being depicted here?

   a) Enduring   b) Volatile
   c) Both enduring and Volatile   d) All of the mentioned

(xiv) Which of these software engineering activities is not a part of software process?

   a) Software verification   b) Software dependence
   c) Software validation   d) None of these

(xv) Which of these are not a characteristic of a good design?

   a) Modularity   b) Flexibility
   c) Overcomplication   d) Maintainability

Group-B
(Short Answer Type Questions)
3 x 5=15

2. Identify the terms 'Error', 'Bug', 'Fault', and 'Failure' with examples.   (3)
3. Differentiate between DFD and ERD.   (3)
4. Explain about level-0 Data Flow Diagram.   (3)
5. Discriminate alpha testing and beta testing.   (3)
6. Correlate between Cohesion and Coupling.   (3)

OR

What are the basic concepts of Total Quality Management (TQM)?   (3)

Group-C
(Long Answer Type Questions)
5 x 6=30

7. Differentiate algorithmic & non-algorithmic Cost Estimation Methods.   (5)
8. Explain the following terms with a proper diagram: 1. Spiral Model. 2. V Model.   (5)
9. Define debugging and What are the common approaches in debugging?   (5)
10. Explain about Software requirement validation.   (5)
11. Consider the process of ordering a pizza over the phone. Design the use case diagram and (5) also sketch the activity diagram representing each step of the process, from the moment you pick up the phone to the point where you start eating the pizza. Include activities that others need to perform. Add exception handling to the activity diagram you developed. Consider at least two exceptions.
12. Summarize the principles of project scheduling.   (5)

OR

Justify Implicit and Explicit effects on software requirement, evaluating the feasibility (5) studies and its outcomes.

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