

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

M.C.A. (2012 & Onward) (Sem.-5)
OBJECT ORIENTED ANALYSIS & DESIGN WITH UML
Subject Code : MCA-504
Paper ID : [A3162]

Time : 3 Hrs.

Max. Marks : 100

INSTRUCTIONS TO CANDIDATES :

- 1. SECTIONS-A, B, C & D contains TWO questions each carrying TWENTY marks each and students has to attempt any ONE question from each SECTION.**
- 2. SECTION-E is COMPULSORY consisting of TEN questions carrying TWENTY marks in all.**
- 3. Use of non-programmable scientific calculator is allowed.**

SECTION-A

1.
 - a) What do you mean by object-orientation (OO)? Briefly discuss the characteristics of OO approach.
 - b) How can concurrency be identified in objects? List the mechanism used to handle concurrency. (10, 10)
2. Differentiate the following with examples :
 - a) Inheritance and Generalization (7)
 - b) Event and State (7)
 - c) Association and Aggregation (6)

SECTION-B

3. What do you mean by Software Development Life Cycle (SDLC)? What are the phases (stages) of it? Which phase requires maximum efforts? Also explain why domain analysis i.e. domain class model, domain state model and domain interaction model is important. (20)
4.
 - a) What is meant by inheritance adjustment? Explain the process of doing this in case of object oriented model. (10)
 - b) What are three major steps required for design optimization? Show the design of different types of association, with suitable examples. (10)

SECTION-C

5. a) How is UML used in visualizing, specifying, constructing and documenting object oriented system? Briefly explain. (10)
b) What are use case diagrams? Explain with two suitable examples. (10)
6. a) What is a collaboration diagram? What is the importance of collaboration diagram? Draw collaboration diagram for student management system. (10)
b) Draw a state diagram for online submission of examination form. (10)

SECTION-D

7. What are the phases of Object Modeling Technique (OMT)? To which of these phases is UML applicable? Compare Jackson Structured Development (JSD) with the approach of OMT. (20)
8. Write short notes on :
a) ArgoUML and its features. (10)
b) Risks in use-case modeling and UI design. (10)

SECTION-E

9. **Write briefly :**
a) What do you mean by a model?
b) Explain the concept of object. How is it different from class?
c) What is meant by abstraction? How is it different from encapsulation? Justify with example.
d) Explain the difference between reusability and extensibility.
e) What do you mean by refactoring?
f) Explain the methods of breaking system into subsystems with reference system design.
g) What do you understand by constraints in object model?
h) What is SRS?
i) Define reverse engineering.
j) What do you mean by open source?