

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

MCA (2012 Batch) (Sem.-5)
OBJECT ORIENTED ANALYSIS AND DESIGN WITH UML

Subject Code : MCA-504

Paper ID : [A3162]

Time : 3 Hrs.

Max. Marks : 100

INSTRUCTION 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) Discuss the benefits of Object Orientation. (5)
 - b) What is a Class Diagram? How to show Relationships, Generalizations, Associations and Aggregations in a class diagram? Give appropriate example. (15)
- 2)
 - a) What is a State diagram? How states and events are represented in a State diagram? How state transitions are shown in state diagrams? Give an example of state diagram. (15)
 - b) What is Object Oriented Modeling? Differentiate between Static Modeling and Dynamic Modeling. (5)

SECTION-B

- 3)
 - a) What is SDLC? Explain various phases of SDLC. (10)
 - b) How a System is divided into Subsystems? Discuss the concept of Coupling and Cohesion in Subsystems. (10)
- 4)
 - a) What is a Design Pattern? Discuss Abstraction-Occurrence Pattern with the help of suitable example. (10)
 - b) How to increase inheritance in Class design by rearrangement? Explain with the help of an example. (10)

SECTION-C

- 5) a) What is the purpose of Use Case diagram? How to draw Use Case diagram? Explain with the help of an example. (10)
- b) What is an Object Diagram? How is it different from a Class Diagram? Give appropriate example of each of them. (10)
- 6) a) What is an Interaction Diagram? Give an example of Interaction Diagram. Where to use these diagrams? (10)
- b) Draw an Activity Diagram for Tic-Tac-Toe game and Traffic Light System using time conditions. (10)

SECTION-D

- 7) a) Discuss various phases of Jackson Structured Development (JSD) in detail. (10)
- b) Discuss the impact of Object Oriented Software Development Methodologies in Software Development. (6)
- c) What is Reverse Engineering? Explain with the help of an example. (4)
- 8) a) Discuss difficulties and risks in Use-Case Modeling and User Interface Design. (10)
- b) Discuss various phases of Object Modeling Technique (OMT). (10)

SECTION-E

- 9) a) How would you identify attributes for a class?
- b) What do you understand by encapsulation?
- c) What is SRS?
- d) What do you understand by Refactoring in Class Design?
- e) What do you understand by multiplicity of associations?
- f) Give an example of a Sequence diagram.
- g) What is Singleton Design Pattern?
- h) What is Collaboration Diagram?
- i) Give any two principles of User Centric Design.
- j) What is ArgoUML? (2×10=20)