

Roll No.....

**10214**

**MCA/M-14**  
**OBJECT ORIENTED METHODOLOGY**  
**Paper—(MCA-404)**

Time Allowed : 3 Hours]

[Maximum Marks : 80

Note : Attempt five questions in all, selecting at least one question from each Unit.

Q.No.1 is compulsory. All questions carry equal marks.

**(Compulsory Question)**

1. Explain the following in brief: 8x3=24

- (a) What are adornments in UML? Give two examples.
- (b) What are Parameterized class, Active class and Collaboration in UML? Give one example of each.
- (c) Differentiate among 'ordered', 'sequences' and 'bags' end names of an association.
- (d) What is Abstraction? Explain levels of an abstraction with a suitable example.
- (e) What is Event? What are attributes of an event? Give an example.
- (f) What is Actor? How can you find it?
- (g) Explain three trade-off priorities.
- (h) Explain three guidelines of make a program robust.

**UNIT—I**

2. (a) What is Activity diagram? List various symbols used in an activity diagram along with their brief description. Draw an activity diagram to send an SMS on a mobile phone. 7

- (b) What is use case diagram? Discuss relationships between actors, between use

- cases and between an actor and a use case by giving suitable examples. 7
3. (a) What is package in UML? Discuss relationships among packages with suitable examples. 5
- (b) Draw a collaboration diagram to withdraw money from an ATM. 5
- (c) What are extensibility mechanisms in UML? Explain each with suitable example.
4. Explain the following each with a suitable example from real world: Object persistence, Hierarchical inheritance, Link class, Qualified association, Multiplicity of 4+ & one or more, Quaternary association and aggregation versus composition. 14
5. (a) Explain the concept of Meta data, abstract class and constraints in reference to object model. 7
- (b) Draw a class diagram for hotel management system. 7
6. (a) What is scenario? Write a successful scenario, to send an email from a computer.
- (b) Draw a nested state diagram to make phone call on a land line phone. Include possible activities, attributes of events and actions. 7
7. (a) Draw a DFD for order processing system. 7
- (b) How do you add operations to class from object model and functional mode? Explain. 7

## UNIT—IV

8. (a) What is Subsystem? What are criteria to decompose a system into subsystems? What are relationships between subsystems? How do you decide

- to allocate subsystems to processors? 7
- (b) What are External and Internal software controls? Discuss how does a system designer choose a software control? 7
- (a) Discuss the steps used to design algorithms during object design. 7
- (b) How can object designer optimize designs? Explain with examples. 7