Roll No. ……. Total Pages: 3

10219

MCA/M-15
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. Question No. 1 is compulsory.

Compulsory Question

1. Answer the following questions in brief:
   (a) What are constraints in UML? Give two examples of different types of constraints.
   (b) What is component in UML? What are 'required' and 'provided' interfaces of a component?
   (c) Give three differences between strongly typed and weakly typed programming languages.
   (d) Correlate abstraction, encapsulation and class.
   (e) What is aggregation concurrency? Explain with an example.
   (f) Give three relationships between object model and dynamic model.
   (g) What are pros and cons of open and closed architecture in a layered system?
   (h) Explain three guidelines for programming- in –the- large.

UNIT-I

2. (a) What is use case diagram in UML? Draw a use case diagram for Library Management System.
   (b) What is sequence diagram? Draw a sequence diagram to send an e-mail from a computer.

3. (a) Draw an activity diagram to withdraw money from an ATM.
   (b) What is node? Explain different notations used in a development diagram with a suitable example.

UNIT-II

4 (a) what is inheritance? Explain hierarchical, multilevel and multipath by taking suitable examples from real world: Composition, association class, qualified association, multiplicity of 2+ multiplicity of 0 or 1, self association and role name.

5(a) Explain the following concept: Meta data, reification and ojject persistence.
(b) Draw a class diagram for the following classes. Use association names, multicity and association end names where needed. You can also add new classes.

Expression, constant, variable, function, argument list, relational operator, term, factor, arithmetic operator, statement, computer program.

UNIT-III

6 (a) What is Scenario? Write a scenario to send an SMS from a mobile phone.
(b) Draw a nested state diagram to make a phone call on a landline phone showing all possible events, even attributr, actions and activity.

7 (a) What are nested DFDs? Explain with a suitable example.
(b) Discuss the relationship among object model, dynamic model and functional model.

UNIT-IV

8 (a) What are Global resources? How does a system designer determine mechanisms for controlling access to global resources?
(b) What are Boundary conditions of a system? How are they handled?

9 (a) How does an object designer optimize design during object design? Explain.
(b) Discuss guidelines to make a program extensible.