15|05|2017

Roll No. ....   Total Pages : 03

OMCA/M-17   10022

OBJECT ORIENTED METHODOLOGY
MCA-404

Time : Three Hours]   [Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

1. Answer the following questions in brief :   2×8=16

   (i) Explain dependency and realization relationships in UML by giving suitable examples.

   (ii) What do you mean by "Unified" in UML ?

   (iii) Distinguish between strongly typed and untyped programming languages.

   (iv) What is a ternary and m-ary association ? Give examples.

   (v) What are adornments and stereotypes in UML ? Explain.

   (vi) Distinguish between control flow and data flow by giving suitable examples.

   (vii) What are the style rules used for reusability ?

   (viii) How can you determine target objects of a sub-operation ?

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Unit I

2. (a) What do you understand by semantic rules ? Explain visibility, integrity and execution in UML.   8

   (b) What do you mean by use case diagram in UML ? Draw a use case diagram for a ticket distributor for a train system.   8

3. (a) What is sequence diagram in UML ? Draw a sequence diagram for a session with an online stockbroker.   8

   (b) What is activity diagram in UML ? Discuss different symbols used in an activity diagram. Draw activity diagram to withdraw money from an ATM.   8

Unit II

4. (a) Explain in detail about the concept of modularity and encapsulation with example.   8

   (b) What is Object Modeling Techniques (OMT) ? Explain its phases.   8

5. (a) Write short notes on the following :

      (i) Aggregation and Composition   4

      (ii) Abstract Class and Meta Data.   4

   (b) What is an association ? Discuss multiplicity, qualifier, link class with suitable examples.   8

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Unit III

6. (a) Discuss the relationship among object model, dynamic model and functional model. **8**

   (b) What do you mean by Data Flow Diagram (DFD) ? What are the different symbols used in a DFD ? Explain with a proper diagram. **8**

7. What is State Diagram ? What is its significance ? Draw the state diagram for automatic transmission of a car. Explain the need of nested state diagrams with a suitable example. **16**

Unit IV

8. (a) Discuss the mapping of subsystems to hardware units. **5**

   (b) How do you identify boundary conditions ? Discuss. **5**

   (c) What are global resources ? How are they handled ? **6**

9. (a) What are main guidelines of object-oriented system ? Explain. **8**

   (b) Explain in detail about guidelines to design algorithms in object design phase. **8**