Roll No. ……………
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10214

MCA/M- 13
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.

1. Answer the following question in brief :
   (a) What is abstraction? How is it different from encapsulation?
   (b) Explain dependency and realization relationships in UML by giving suitable
       examples.
   (c) What are adornments and stereotypes in UML? Explain.
   (d) Differentiate between aggregation and composition by giving suitable
       examples.
   (e) What is concurrency? How do you capture synchronization of concurrent
       Activities in state diagram?
   (f) What is context diagram? Draw the context diagram of a library system.
   (g) Explain style rules used for reusability.
   (h) How can you determine target objects of a suboperation?
                        UNIT-I
2. (a) What are structural things in UML? Explain each in brief.
   (b) What is usecase diagram in UML? Discuss different types of relationships
        Used in usecase diagram with suitable examples.
3. (a) What is collaboration diagram UML? Draw collaboration diagram to
        Withdraw money from an ATM.
   (b) What is activity diagram UML? Draw activity diagram for stock trade
        Processing system.
                        UNIT-II
4. (a) What is object? What are four characteristics of an object? List five tangible
        and five non-tangible objects from real world.
   (b) What is multiple inheritance? Give three suitable examples of multiple
        inheritance from real world.
   (c) What do you mean by persistence of objects? Explain by giving suitable
        Examples.
5. (a) What is class diagram? Discuss different types of constraints used in class
        diagram.
   (b) Prepare a class diagram for each group of classes. Use generalization,
        Aggregation, association and association end names wherever needed. Also
        Use qualified associations and show multiplicity: school, playground,
         principal, school board, classroom, book, student, teacher, cafeteria,

restroom, computer, desk, chair, ruler, door, swing.

UNIT-III

1. (a) Define object model, dynamic model and functional model. Discuss relationships among them.
   (b) What is scenario? Write a scenario to send an e-mail.

7. (a) A simple digital watch has a display two buttons to set it, the A button And the B button. The watch has two modes of operation, display time and set time. In the display time mode, the watch displays hours and minutes, separated by flashing colon. The set time mode has two submodes, set hours and set minutes. The A button selects modes. Each time it is pressed, the mode advances in the sequence : display, set hours, set minutes, display and so on. Within the submodes, the B button advances the hours or minutes once each time it is pressed. Buttons must be released before they can generate another event. Prepare a state diagram of the watch.
   (b) What is DFD? Discuss different symbols used in DFD.

UNIT-IV

8. (a) What is system design? How do you identify concurrency?
   (b) How do you choose software control implementation during system design?
   (c) How do you allocate tasks to processors during system design?

9. (a) Explain the steps, which are followed to design algorithms.
   (b) Explain the guidelines which are to be followed for programming –in-the-Large.