USN [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]　　　　**16/17MCA51**

Fifth Semester MCA Degree Examination, Aug./Sept.2020
Object Oriented Modeling and Design Patterns

Time: 3 hrs.　　　　　　　　　　　　　　　　　　　　　Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1. a. What is OO development? List and explain various themes that are supported by OO technology. **(08 Marks)**
   b. Define the terms model and abstraction. Describe the three models which support for modeling system in different viewpoints. **(08 Marks)**

OR

2. a. Define the following terms with respect to object and class concepts:
   (i) Operation and method
   (ii) Signature and feature
   (iii) Values and Attributes
   (iv) Class diagram and object diagram **(08 Marks)**
   b. Define the terms aggregation and composition. Explain each with an example. **(08 Marks)**

Module-2

3. a. What is One-Shot state diagram? With a neat diagram, explain the summary of basic notation for state diagram. **(08 Marks)**
   b. What is nested state? With neat diagram, describe the nested state diagram of a phone line. **(08 Marks)**

OR

4. a. What is a scenarios? Describe the scenario for a session with an online stock broker. **(08 Marks)**
   b. What is an activity diagram? With neat diagram, describe activity diagram for execute order for stock trade processing. **(08 Marks)**

Module-3

5. a. What do you mean by a system conception? List the different ways to find new system concepts. Give the ATM network to show a problem statement for an Automated Teller Machine (ATM). **(08 Marks)**
   b. What is a domain analysis? With neat diagram, explain the overview of domain analysis. **(08 Marks)**

OR

6. a. List and explain the various criteria to eliminate unnecessary and incorrect attributes. **(08 Marks)**
   b. Describe the steps are to be performed in constructing a domain state model. **(08 Marks)**

Module-4

7. a. Explain the management of data storage with respect to (i) Files (ii) DBMS. **(08 Marks)**
   b. List the various architectural styles. Explain any two of them. **(08 Marks)**

OR

8   a.   Describe the steps to be performed to design algorithms.   (08 Marks)
     b.   What are the three tasks involved in design optimization? Explain any one in detail.
                                                                                              (08 Marks)

Module-5

9   a.   What is a pattern? Explain the model-view-controller design pattern for software
           architecture with OMT diagram.   (08 Marks)
     b.   Briefly discuss the structure of the client-dispatcher-server design pattern using CRC.
                                                                                              (08 Marks)

OR

10   a.   What is command processor design pattern? Describe various steps to be carried out to
           implement this pattern.   (08 Marks)
     b.   Define Publisher Subscriber design pattern. Describe the solution for this pattern.   (08 Marks)

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