## CBCS SCHEME

USN ☐☐☐☐☐☐☐☐☐☐

17CS551

### Fifth Semester B.E. Degree Examination, July/August 2021
## Object Oriented Modeling and Design

Time: 3 hrs.

Max. Marks: 100

**Note:** *Answer any FIVE full questions.*

**1**  a. Explain Object Orientation. What are the aspects of object orientation? **(06 Marks)**
b. Explain the concepts of object oriented Themes. **(04 Marks)**
c. List and explain various restricting techniques used with respect to workarounds. **(10 Marks)**

**2**  a. Prepare a class diagram for group of classes, show atleast 3 relationships (associations, generalization) sink, freezer, table, light, switch, window, refrigerator, smoke alarm, burglar alarm, cabinet, bread, cheese, ice door, and kitchen. **(10 Marks)**
b. Explain the following with the example:
    i) Qualified association
    ii) Aggregation
    iii) Ordering
    iv) Association class. **(10 Marks)**

**3**  a. Define :
    i) Actor
    ii) Guard condition
    iii) Pseudostate
    iv) State
    v) Object lifeline. **(05 Marks)**
b. Write Usecase diagram of order entry subsystem for RMO showing a system boundary. **(05 Marks)**
c. Explain System Sequence Diagram of simplified Telephone order scenario for the create new order usecase. **(10 Marks)**

**4**  a. Write Short notes on :
    i) Nested states
    ii) Concurrency. **(10 Marks)**
b. List the steps for developing state charts. **(10 Marks)**

**5**  a. What is software development process? Explain the stages of software development. **(10 Marks)**
b. Prepare a data dictionary for an ATM system. **(10 Marks)**

**6**  a. Define system concept. What are the ways to find new system concept. **(05 Marks)**
b. Explain any 5 criteria's to select right attributes. **(05 Marks)**
c. Elaborate and explain the questions to be answered for a good system concept. **(10 Marks)**

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| 7 | a. | What is a stereotype? Describe the standard stereotype found in design models? | (10 Marks) |
| | b. | Write short notes on : <br>    i) Encapsulation <br>    ii) Navigation Visibility. | (10 Marks) |
| 8 | a. | Describe the symbols used in communication diagram. | (05 Marks) |
| | b. | Write short notes on separation of responsibilities. | (05 Marks) |
| | c. | Explain the symbols used to define a design class notation. | (10 Marks) |
| 9 | a. | What is a design pattern? Explain 4 essential elements of pattern. | (10 Marks) |
| | b. | Write short notes on : <br>    i) Singleton pattern <br>    ii) Prototype pattern. | (10 Marks) |
| 10 | a. | Explain the adapter in structural pattern. | (10 Marks) |
| | b. | Explain step by step approach to use a design pattern. | (07 Marks) |
| | c. | Differentiate between Patterns and frameworks. | (03 Marks) |

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