

# CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

17CS551

## Fifth Semester B.E. Degree Examination, Feb./Mar. 2022 Object Oriented Modeling and Design

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. What is object orientation? Explain its aspects with an example. Explain the concept of OO themes. (10 Marks)
- b. What is object oriented development? Explain briefly the stages involved in object oriented methodology. (10 Marks)

OR

- 2 a. Explain : (i) Aggregation versus Association (ii) Aggregation versus Composition (05 Marks)
- b. Prepare a metadata of a CAR model that supports only the following UML concepts: class, attribute, association, association end multiplicity, class name and attribute name. Use only these constructs to build the metadata. (05 Marks)
- c. Discuss the purpose of three models. (10 Marks)

### Module-2

- 3 a. What are nested states? Explain nested states with an example. (04 Marks)
- b. Consider a physical bookstore, such as in a shopping mall:
  - (i) List three actors that are involved in the design of a checkout system. Explain the relevance of each actor.
  - (ii) One use case is the purchase of items. List another use case at a comparable level of abstraction. Summarize the purpose of each use case with a sentence. (06 Marks)
  - (iii) Prepare use case diagram for a physical bookstore checkout system. (06 Marks)
- c. Explain the following software development life cycle:
  - (i) Waterfall development
  - (ii) Iterative development (10 Marks)

OR

- 4 a. Draw the use-case diagram for ATM and explain each use-case. (06 Marks)
- b. With an example, explain aggregation concurrency. (08 Marks)
- c. Explain scenarios and sequence diagram of an online stock broker. (06 Marks)

### Module-3

- 5 a. Discuss the steps to construct a domain class model with an example. (10 Marks)
- b. Explain software development stages. (10 Marks)

OR

- 6 a. What are the steps involved in constructing an application class model? (10 Marks)
- b. Explain in detail how a system is broken into subsystems. (10 Marks)

### Module-4

- 7 a. Write briefly on: (i) Fine tuning class (ii) Design optimization (06 Marks)
- b. Differentiate between forward engineering and reverse engineering. (06 Marks)
- c. Explain the consideration for choosing alternative algorithm. (08 Marks)

OR

- 8 a. Mention the steps involved in implementation modeling. Explain the first step. (10 Marks)  
b. Explain the structure and dynamics of forward-receiver pattern. (10 Marks)

**Module-5**

- 9 a. What is a pattern? Explain the properties of pattern for software architecture. (06 Marks)  
b. Explain the model view controller design pattern for software architecture with OMT class diagram. (06 Marks)  
c. Briefly explain the structure of the client-dispatcher server design pattern using CRC. (08 Marks)

OR

- 10 a. Give an example design pattern for management of software system. Explain briefly. (10 Marks)  
b. Explain the behaviour of the view handler for the scenario "view creation". (10 Marks)

\*\*\*\*\*