

USN : _____

Course Code :18CS52/IS52

Fifth Semester B.E MAKEUP Examination, MARCH_MAY_2021

OBJECT ORIENTED MODELING AND DESIGN

Time: 3 hrs

Max. Marks :100

Instructions :1. Answer FIVE full Questions selecting at least ONE Question from Each Unit.

MODULE 1

L CO PO M

1a. Define modeling. List and Explain purpose of modeling.

[2] [1] [2] [6]

1b. What is OO development? Explain its methodology with an example.

[2] [1] [2] [7]

1c. What is Generalization? Illustrate with an example.

[2] [1] [2] [7]

OR

2a. Compare different models along with relation between them.

[2] [1] [2] [6]

2b. Build a class diagram for a graphical document editor that supports grouping. Assume that a document consists of several sheets. Each sheet contains drawing objects, including text, geometrical objects, and groups. A group is simply a set of drawing objects, possibly including other

groups. A group must contain at least two drawing objects. A drawing object can be a direct member of at most one group. Geometrical objects include circles, ellipses, rectangles, lines, and squares.

[3] [2] [3] [8]

2c. Explain the following with an example.

i) Multiplicity

ii) Association classes

iii) Qualified Association

[2] [1] [2] [6]

MODULE 2

3a. Define state diagram. Design state diagram for library management system and explain the same.

[3] [2] [2] [10]

3b. What is an event? List and explain the three types of events

[3] [1] [1] [6]

3c. Draw a nested state diagram for telephone line

[3] [2] [3] [4]

OR

4a. Draw a state diagram for programmable thermostat

[3] [2] [3] [5]

4b. Explain guard condition with an example

[2] [2] [3] [5]

4c. Define the following.

1. State

2. State diagram

3. Transition

4. Event

5. Effect

[2] [2] [1] [10]

MODULE 3

- 5a. With an example give the comparison between the features of use case relationship. [4] [2] [3] [6]
- 5b. Analyze an online Book Store System.
- List two actors. Explain the relevance of each actor.
 - List four use cases at a comparable level of abstraction. Summarize the purpose of each use case with a sentence.
 - Prepare a use case diagram for an online Book Store System
- [4] [3] [2] [8]
- 5c. List and Explain the guidelines for Use case model. [2] [1] [2] [6]

OR

- 6a. Build an activity diagram for execute order w.r.t stock trade processing. [3] [2] [3] [6]
- 6b. Build the sequence diagram for an email server system that sends a text email to some destination email address via typical email service. [3] [2] [3] [8]
- 6c. Define sequence diagram. Make use of the sequence diagram to analyze and explain ATM system. [4] [2] [3] [6]

MODULE 4

- 7a. Explain the steps used to construct a domain class model [2] [2] [1] [10]
- 7b. List the steps involved in building domain state model. Point out the importance of identifying the right classes and evaluating the state diagrams considering ATM example [4] [3] [3] [10]

OR

- 8a. List and explain the criteria used for eliminating unnecessary and incorrect attribute in domain class modelling [2] [3] [2] [10]
- 8b. Illustrate the process of selection and keeping the right associations during domain analysis [2] [3] [2] [10]

MODULE 5

- 9a. List and explain the steps involved in constructing an application class model [2] [3] [2] [10]
- 9b. What is application interaction model? Illustrate the steps involved in building an application interaction model. [2] [3] [2] [10]

OR

- 10a. Describe application analysis with ATM banking system example [4] [3] [5] [10]
- 10b. Explain how do you find the initial event and final event in application analysis [2] [3] [1] [5]
- 10c. Explain how do you find the external event in application analysis [2] [3] [1] [5]
- [2] [3] [1] [5]

Fifth Semester B.E Semester End Examination, JANUARY_MARCH_2021**OBJECT ORIENTED MODELING AND DESIGN**

Time: 3 hrs

Max. Marks :100

Instructions :1. Answer FIVE full Questions selecting at least ONE Question from Each Unit.

MODULE 1

L CO PO M

1a. What is object-oriented development? List and explain the OO themes [2] [1] [1] [10]

1b. Explain the three models used in object-oriented modelling and design [2] [1] [1] [10]

OR

2a. Define the following terms with example:

1. Links and associations
2. Multiplicity
3. Association end names
4. Ordering
5. Bag and sequence

[2] [1] [1] [10]

2b. What is generalization? Explain the generalization with example [2] [1] [1] [10]

MODULE 2

3a. Define state diagram. Construct a state diagram for telephone line. [3] [2] [3] [7]

3b. What is an event? Explain different types of events with an example. [2] [1] [2] [7]

3c. Explain the different behaviors of state diagrams with example for each one. [2] [1] [2] [6]

OR

4a. List the significance of state modeling. [1] [1] [2] [5]

4b. What are nested states? Explain the concept of nested states with an example. [2] [1] [2] [8]

4c. Analyze the working of Microwave Oven Home Appliance, Identify & describe States, Events for the same. [4] [2] [3] [7]

MODULE 3

5a. Prepare a use case diagram by analysing the steps involved in sending a mail through computer system. List the actors and explain the relevance of each other with corresponding use case [4] [2] [3] [10]

5b. List and explain the guidelines for use case diagrams [2] [1] [1] [6]

5c. Sketch a sequence diagram for a session with an online stock broker. [3] [2] [3] [4]

OR

6a. List and explain the guidelines for sequence model [2] [1] [1] [5]

6b. What is an activity diagram? Write an activity diagram by analyzing the scenario of executing order in a stock brokerage system [4] [2] [3] [10]

6c. Write a note on

1. Include relationship
2. Extend relationship

[2] [1] [1] [5]

MODULE 4

7a. Explain the following steps required to construct a Domain Class Model with an example.

- a) Finding Classes
- b) Keeping the Right Classes
- c) Finding Associations
- d) Shifting the level of Abstraction
- e) Group classes into packages

[2] [3] [3] [10]

7b. What do you mean by domain state model? Identify and describe the steps required for constructing a domain state model.

[3] [2] [3] [10]

OR

8a. Explain the different criteria in discarding the unnecessary and incorrect associations.

[2] [2] [3] [10]

8b. Illustrate with an example the steps to organize the classes by using inheritance to share common structure.

[2] [3] [5] [10]

MODULE 5

9a. How activity diagram can be used in the application interaction model. Construct an Activity diagram for ATM card verification.

[3] [3] [5] [10]

9b. What is Application class model? List steps involved in Application class model. Explain briefly.

[2] [3] [2] [10]

OR

10a. Explain the following steps related to Application Interaction Modeling.

- a) Determine the system boundary
- b) Find Actors
- c) Find use cases
- d) Find Initial and Final events
- e) Add variation and exception scenarios.

10b. What do you mean by Class design? Identify the steps involved in class design.

[2] [3] [2] [10]

[3] [1] [2] [10]

USN : _____

Course Code : 16CS65

Sixth Semester B.E FASTTRACK Examination, AUGUST SEPTEMBER 2021
OBJECT ORIENTED MODELING AND DESIGN

Time: 3 hrs

Max. Marks :100

Instructions:- Answer any Five full Questions.

- | | L | CO | PO | M |
|--|-----|--------|-----|------|
| 1a. What is OO system Development Methodology? Explain. | [2] | [1] | [1] | [10] |
| 1b. Define modelling. List and Explain purpose of modelling. | [2] | [1] | [1] | [10] |
| 2a. Draw the class diagram for figure class has different dimensions (0,1,2). Show at least one example classes for each of the dimensions. | [3] | [1] | [3] | [10] |
| 2b. Explain the following with examples:
i) Multiplicity ii) Association classes
iii) Qualified Association | [2] | [1] | [1] | [10] |
| 3a. Define state diagram. Design a state diagram for telephone line. | [3] | [2] | [3] | [10] |
| 3b. What are nested states? Explain the concept of nested states with an example | [2] | [2] | [1] | [10] |
| 4a. Analyze the working of Microwave Oven Home Appliance, Identify & describe States, Events for the same. | [4] | [2] | [3] | [10] |
| 4b. Design a state diagram for ATM Banking system. | [3] | [2] | [3] | [10] |
| 5a. Design use case diagram for Amazon E-commerce Application & also list at-least 04 use cases and 2- actors for the same. | [3] | [2] | [3] | [10] |
| 5b. Design Activity diagram for Attendance management system of the college. | [3] | [3] | [3] | [10] |
| 6a. List and Explain Guidelines for designing Use case diagram. | [2] | [2] | [1] | [10] |
| 6b. Explain the following with examples
i) Include Use case relationship
ii) Extend Use case relationship
iii) Generalization Use-case relationship | [2] | [3] | [1] | [10] |
| 7a. How do you eliminate unnecessary and incorrect classes during domain analysis? Explain briefly. | [2] | [3] | [1] | [10] |
| 7b. Explain the steps to be performed in constructing Domain state model. | [2] | [2, 3] | [1] | [10] |
| 8a. Explain the following related to Domain class model
i) Prepare Data dictionary
ii) Find Associations
iii) Group classes into Packages | [2] | [3] | [1] | [10] |

- 8b. Define Domain Interaction model? Explain the steps related to construct Domain Interaction Modelling. [2] [3] [2] [10]
- 9a. Define Application Interaction model? Explain the steps related to construct Application Interaction Modeling. [2] [3] [1] [10]
- 9b. List and Explain Steps involved in constructing Application class model. [2] [3] [1] [10]
- 10a. Explain the following related to Application Interaction model
i)Add variations & Exceptional Scenarios
ii)Prepare Activity diagrams for Complex use cases [2] [3] [1] [10]
- 10b. What is class design. List the steps involved in the process of class design. [2] [3] [1] [10]

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| 1b. Define modelling. List and Explain purpose of modelling. | [2] | [1] | [1] | [10] |
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| 7a. How do you eliminate unnecessary and incorrect classes during domain analysis? Explain briefly. | [2] | [3] | [1] | [10] |
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8b. Define Domain Interaction model? Explain the steps related to construct Domain Interaction Modelling.

[2] [3] [2] [10]

9a. Define Application Interaction model? Explain the steps related to construct Application Interaction Modeling.

[2] [3] [1] [10]

9b. List and Explain Steps involved in constructing Application class model.

[2] [2] [1] [10]

10a. Explain the following related to Application Interaction model

[2] [3] [1] [10]

i)Add variations & Exceptional Scenarios

ii)Prepare Activity diagrams for Complex use cases

10b. What is class design. List the steps involved in the process of class design.

[2] [3] [1] [10]