USN : _____ Course Code : 16CS65

Sixth Semester B.E Makeup Examination, Sept._Oct._2020

OBJECT ORIENTED MODELING AND DESIGN

Time: 3 hrs Max. Marks :100

Instructions :1. 1. Answer any Five full Questions selecting at least One Full Question from Each Unit. 2. Each Question carry Equal Marks. 3. Missing Data may be suitably assumed. 4. Draw Figures wherever necessary.

MODULE 1

	L	CO	PO	M
1a. Describe the themes of Object Oriented technology	[2]	[1]	[2]	[6]
1b. Explain the three models of object oriented development and explain the relationship between them	[2]	[1]	[2]	[6]
1c. Design a complete class diagram for the problem statement: A company consists of departments. Departments are located in one or more offices. One office acts as a headquarter. Each department has a manager who is recruited from the set of employees. Your task is to model the system for the company. Note: Apply domain knowledge wherever needed.	[3]	[1]	[3]	[8]

OR

2a. Describe the object oriented methodology for software development.	[3]	[1]	[1]	[6]
2b. Design a complete class diagram for the problem statement:An online hotel room booking System should support a customer to book a room of any type by making payments through either using the debit card or credit card. The customer should have the provision for choosing and canceling the room of interest.	[3]	[1]	[3]	[8]
2c. Explain the concept of Inheritance and generalization. Apply the same to draw the family tree till 3 levels of generation starting from your generation	[3]	[1]	[1]	[6]

MODULE 2

3a. Design a state diagram for a typical telephone line showing all the states and events in it.	[3]	[2]	[3]	[8]
3b. List and explain the behaviors of state diagram with an examples for each.	[2]	[2]	[2]	[8]
3c. Differentiate the events and guard condition with an example.	[4]	[2]	[2]	[4]

OR

4a. Explain with examples representation of the concurrent state in state modeling.	[2]	[2]	[2]	[6]
4b. List and explain the three types of state modelling events with an example for each.	[2]	[2]	[2]	[6]
4c. Design the state diagram for a postal card delivery using speed post services. Show at least 5 or more states.	[6]	[2]	[2]	[8]

MODULE 3

5a. Design an Activity model and explain the process for an ATM problem statement: The customer can perform various transactions using ATM card. The Before conducting any transactions the customer should be validated and then a session should be initiated. The

customer can also query for accounts details. The transaction data are maintained with bank, which they can share with Bank consortium.

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

5b. Design a use case diagram for a typical E-commerce website for ordering various types of items. Explain each of the identified use cases.

[6] [2] [3] [10]

OR

6a. Design the sequence diagram for typical Email services (to send and open the Email) showing at least 10 or more interactions between the objects/entities/classes.

[6] [2] [3] [10]

6b. Explain with example the include, extends and generalization relationships as applicable to use-cases

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

MODULE 4

7a. Explain the overview of analysis process as applicable for object oriented development.

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

7b. For a bank ATM case study, identify the list of relevant classes and list of Bad classes. Justify your selections

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

7c. Explain the process of retaining the right associations for any given problem statement.

[2] [3] [2] [7]

OR

8a. Write the conditions for eliminating the unnecessary and incorrect attributes in domain class modeling and apply the same for ATM example

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

8b. Develop the final domain class model for ATM example showing the right attributes and inheritance/s

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

MODULE 5

9a. Apply the following steps in Application interaction modeling taking ATM case study.

1.Determining the system Boundary,
2.Finding the actors and use-cases,
3.Finding the initial and final events.

[3] [3] [3] [12]

9b. Demonstrate the Application class models with an Example.

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

OR

10a. Apply the following steps in Application interaction modeling taking ATM case study.

1.Preparing the Scenario for process transaction
2.Identifying the events.
3.Preparing the Activity diagram for Card verification Use-case.

[3] [3] [3] [12]

10b. List and explain the steps in class design

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

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Fifth Semester B.E. Semester End Examination, Dec/Jan 2017-18

OBJECT ORIENTED MODELING AND DESIGN

Time: 3 Hours

Max. Marks: 100

Instructions: 1. *Unit I and Unit III are compulsory.*
2. *Answer any one question from remaining Units.*
3. *Draw UML diagrams neatly*

UNIT - I

Define the term model. Explain the 3 models in detail. List the advantages of modeling. **10 M**

(Level [2], CO [1], PO [1])

Explain the following with an example for each. **10 M**
a)Links and Association b)Aggregation c)Association Ends

(Level [2], CO [1], PO [1])

UNIT – II

a. Define the term Event. Explain signal, change and time event with an example for each. **10 M**

(Level [2], CO [2], PO [1])

b. Make use of a neat UML state diagram to explain the working of a telephone line. **10 M**

(Level [3],CO [2], PO [2])

OR

a. Explain Activity effects, Do activities and Entry and Exit activities with an example for each. **10 M**

(Level [2], CO [2], PO [2])

b. Make use of UML diagrams for a Car to explain the concept of Aggregation Concurrency. **10 M**

(Level [3], CO [2], PO [2])

UNIT - III

a. Explain the term Actors, Use Case and Use Case diagrams with examples. List the guidelines for Use Case models. **10 M**

(Level [2], CO [3], PO [2])

b. Identify the different Use Case relationships with neat diagrams for each. **10 M**

(Level [3], CO [3], PO [2])

UNIT - IV

a. Identify the steps performed in constructing a Domain State Model. **10 M**

(Level [3], CO [4], PO [6])

b. Identify the steps performed in constructing an Application Class Model. **10 M**

(Level [3], CO [4], PO [6])

OR

Explain the following steps required to construct a domain class model. **20 M**
a) Find Classes
b) Finding Associations
c) Shifting Level of Abstraction
d) Grouping Classes into Packages

(Level [2], CO [4], PO [6])

UNIT -V

Explain the following steps related to Class Design. **20 M**
a) Bridging the gap
b) Designing Algorithms
c) Recursing Downward
d)Organizing a Class Design

(Level [2], CO [5], PO [6])

OR

20 M

8 Explain the following steps related to Implementation modeling

a) Fine-Tuning Classes
b) Fine Tuning Generalizations
c) Realizing Associations
d) Testing

(Level [2], CO [5], PO [6])