Total No. of Questions : 12]

P1901

SEAT No. :

[Total No. of Pages : 3

[5059] - 222

B.E. (Information Technology)

OBJECT ORIENTED MODELING AND DESIGN

(2008 Pattern) (Semester - I)

Time : 3 Hour] *[Max. Marks : 100*

Instructions to the candidates:

    1)   *Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6 from Section I and*

    2)   *Solve Q.7 or Q.8, Q.9 or Q.10, Q.11 or Q.12 from Section II*

    3)   *Answers to the two sections should be written in separate books.*

    4)   *Figures to the right indicate full marks.*

    5)   *Neat diagrams must be drawn wherever necessary.*

    6)   *Assume suitable data, if necessary.*

SECTION - I

Q1) a) Define State Diagram and State Model. Develop a State Machine Diagram for an elevator system of a building. State clearly the assumptions you make about the system. **[8]**

    b) What is an association end? What are the properties of association end? **[6]**

    c) Discuss by giving appropriate example when will you model an entity such as 'bank account' as. **[4]**

       i)   Attribute

       ii)   Class

OR

Q2) a) Explain 4+1 view architecture with corresponding UML diagram. **[8]**

    b) Discuss the difference between Inception and Elaboration phases of Rational Unified Model. **[6]**

    c) Compare Interface and Port giving examples. **[4]**

Q3) a) OMG standard CORBA is a standard for middleware to develop distributed networked. applications. Explain the following concepts in context of distributed application and CORBA. 1) Distributed objects/components 2) Stubs and Skeletons 3)Interfaces. **[8]**

    b) How do you show an OBJECT in a class diagram, explain with an appropriate example and with correct notation the conversion of class diagram into object diagram? **[8]**

P.T.O.

OR

Q4) a) Write a short note on UML versions. **[8]**

b) Explain the need of XML, MOF and XMI. **[8]**

Q5) a) What is use case diagram? Identify the various use cases and draw the use case diagram for " Online Examination System". **[8]**

b) The System is for a marketing company. We have the country divided into marketing regions. Salespersons work for regions. Salespersons make sale that are described in terms of the day of sale, the products sold with quantity and rate. The products are categorized into two categories: Indian products and imported products. Draw the class diagram using aggregation, inheritance, association, dependency and realization relationships to model above system. **[8]**

OR

Q6) a) Write a note on composite structure Diagram. **[4]**

b) Draw a package diagram for "Online Hotel Booking System" showing packages, package relationships. **[4]**

c) Draw a class diagram for "Online Railway Reservation System" using advanced notations. Assume suitable data. **[8]**

SECTION - II

Q7) a) An auto rental company wants to develop an automated system that would handle car reservations, customer billing, and car auctions. Usually a customer reserves a car, picks it up, and then returns it after a certain period of time. At the time of pick up, the customer has the option to buy or waive collision insurance on the car. When the car is returned, the customer receives a bill and pays the specified amount. In addition to renting out cars, every six months or so, the auto rental company auctions the cars that have accumulated over 20,000 miles. Draw a use- case diagram for capturing the requirements of the system to be developed. Include an abstract use case for capturing the common behavior among any two use cases. Extend the diagram to capture corporate billing, where corporate customers are not billed directly; rather the corporations they work for are billed and payments are making sometime later. **[8]**

b) Write a short note on deployment diagrams, need, example, and notation. **[6]**

c) Compare Forward Engineering and Reverse Engineering. **[4]**

OR

Q8) a) Draw a sequence diagram for 'Schedule a faculty meeting'. Here are some of the assumptions. The HOD interacts through a (GUI) form to schedule the meeting. A special control object called scheduler does the automated meeting scheduling. The scheduler bases its decision on free slots in the (entity object) timetable. The entire faculty involved will get an invitation through SMS on their mobiles. The system depends on an external mobile gateway subsystem to handle forwarding SMS's. **[8]**

b) What is Sequence Diagram? What are the elements used in Sequence Diagram explain with example. **[6]**

c) Explain the concept of 'asynchronous message' with a suitable example in the context of Sequence Diagram. **[4]**

Q9) a) Draw the Activity diagram for withdrawing money from ATM. **[8]**

b) Explain association and aggregation with an example. **[8]**

OR

Q10) a) Describe Branching and Forking in Activity diagram with suitable example. **[8]**

b) What is the purpose of an Interaction Diagram? Explain with suitable example the different types of interaction diagrams in UML 2.0.. **[8]**

Q11) a) Draw the sequence diagram for issuing CD/DVD from video library. **[8]**

b) What is pattern? How it is categorized? Describe one category with an example. **[8]**

OR

Q12) a) Write a note on Communication Diagram. **[4]**

b) With suitable example, explain different use case relationships. **[4]**

c) Write note on applications of UML in embedded system. **[8]**

○ ○ ○