b) What are the similarities/dissimilarities between a sequence diagram and collaboration diagram? Draw the Interaction diagram for an ATM - used for card based banking system. 7

Roll No ....

MCIT-103
M.E./M.Tech., I Semester
Examination, December 2014
Object Oriented Technology

Time : Three Hours

Maximum Marks : 70

Note: 1. Attempt all questions.
2. Each questions carry equal marks.

1. a) What does the term object oriented mean? Explain the four aspects included in object oriented approach?   7

   b) What is an abstract class? What is a concrete class? Explain with example abstract class and abstract operation.
   7

2. a) How does the object oriented approach differ from the traditional approach? Why is reusability important? How does Object-Oriented Software Development promote (achieve) and improve re usability?   7

   b) Briefly explain following characteristics and themes of object oriented systems: Classification, identity, inheritance, encapsulation, polymorphism, sharing, synergy.   7

3. a) Why model is required in analysis and design? What is the role of UML in preparing the model? Explain the types of model with their purpose in brief. Which of these models belong to structural group and which of them fall under behavioural group?   7

b) Consider the following system for On-line Theatre Booking (for multiplex). Following are the minimum requirement of the system from the perspective of a user who is going to use this on-line system.

- User should be a registered member.

- User can book any number of tickets on availability.

- User should be able to search for the availability of tickets on selecting a particular movie.

- Once user books the ticket a token number will be generated so that on providing this token he will be able to collect tickets before show from theatre premises.

- User can cancel all or some seats of the ticket by providing token number before 1 Hr of scheduled time for that movie.

   i) Describe the system boundary for this application in a few sentences.

   ii) Identify the actors for the application and draw the use case diagram.   7

4. a) What kinds of errors do you make if you directly rush into the implementation phase of a software project? How do you decide which classes, associations and generalizations should be eliminated?   7

   b) Explain the following:

      i) CORBA middle-ware

      ii) COM/ DCOM middle-ware   7

5. a) Why interaction model is more important for application analysis? Briefly explain the steps for preparing 'application interaction model'.   7

   b) Draw the state of a Car as an aggregation of part states (ignition, transmission, accelerator, brake). Draw the state diagrams of all the part states.   7

6. a) Describe following use case relationship:

      include, extend, generalization.   7

   b) Explain in detail all aspects of the Inception phase. Justify the statement that Inception is not the Requirements Phase.   7

7. a) List and briefly describe the various artifacts developed during the elaboration phase. What are the strategies used to find conceptual classes?   7

   b) Differentiate between attribute and association. What are associative classes? When it is useful to model an association as a class?   7

8. a) Under what situation activity diagram should not be used? Which diagrams are preferable under such situations? Also give practical situations, when to use the following diagram: 7

      i) Use-Case Diagram

      ii) Object Diagram

      iii) Interaction Diagram