

MCA (Revised)
Term-End Examination
December, 2015

MCS-032 : OBJECT ORIENTED ANALYSIS AND DESIGN

Time : 3 hours

Maximum Marks : 100

Note : *Question no. 1 is compulsory. Attempt any three questions from the rest.*

1. (a) Define student object responsibility in an MCA program C++ laboratory. 5
- (b) What is inheritance ? Explain the different types of inheritance by giving examples. 5
- (c) A department wants to schedule meetings. There may be various kinds of meetings such as purchase committee, syllabus committee, etc. There is a list of members along with their address for different meetings. Members are distinct for different meetings. Scheduling of meeting needs a room of sufficient size, date and time. The members are informed through an e-mail.

- (i) Draw a class diagram. 5
 - (ii) Draw a state diagram. 5
 - (iii) Draw a use-case diagram. 5
 - (iv) Draw a sequence diagram. 4
 - (v) Identify the states and transitions. 6
 - (d) Draw an activity diagram for booking ticket (e-booking) for a flight from Delhi to Mumbai. 5
2. Differentiate between the following : $5 \times 4 = 20$
- (i) Class and Object
 - (ii) Relational database and Object oriented database
 - (iii) Mapping Many to Many association vs Ternary association
 - (iv) Component diagram and Deployment diagram
 - (v) Interaction diagram and Sequence diagram
3. (a) Write short notes on the following : $4 \times 2 \frac{1}{2} = 10$
- (i) Dynamic Model
 - (ii) One-to-One Association
 - (iii) Transient Classes
 - (iv) Object ID
- (b) Explain how constraints are implemented in object oriented systems. 5
- (c) What is message passing ? Explain two significant benefits of message passing. 5

4. (a) What do you understand by 'Object Orientation' ? Explain the advantages of object oriented approach of system design over structured approach of system design. 10
- (b) What is DFD ? Draw a DFD for a General Store Management System. Make necessary assumptions, wherever required. 10
5. (a) Explain the terms reusability and extendability. Also explain how they are used in object oriented system, with the help of an example. 5
- (b) What is generalization ? Draw a diagram for representing hierarchy of different types of vehicles. 5
- (c) Create a class for Saving Account in a bank and map this class into a database table. 10
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