

MCA (Revised)

Term-End Examination
June, 2009

MCS-032 : OBJECT ORIENTED ANALYSIS
AND DESIGN

Time : 3 Hours

Maximum Mark : 100

Note : Question number 1 is compulsory. Attempt any three question from the rest.

-
-
1. (a) Classify each of the following relationship as either a class, an instance of a class, inheritance relationship, an aggregation relationship and a general association relationship. 5
- (i) Car - Nano
 - (ii) Library - Book issuing clerk
 - (iii) My car -
 - (iv) Professor -
 - (v) Car - Driver
- (b) Draw a state diagram for fixed size stack. 5

- (c) Perform the following tasks for a simple computerized library system :
- (i) Draw a class diagram 5
 - (ii) Draw an object model 5
 - (iii) Draw a use case diagram 4
 - (iv) Draw a generalization, and association diagram 6

Note : Make assumptions, wherever necessary.

- (d) Differentiate between concurrence with and without synchronization using suitable example for each . 6
- (e) Define state charts. Explain the two strategies to implement state charts. 4

2. Differentiate between the following. 5x4=20

- (a) Usecase and Usecase diagram
- (b) Package and a Subsystem
- (c) Generalization and inheritance
- (d) OODBMS and RDBMS
- (e) Functional modeling and object modeling

3. (a) Define the following terms : 5x2=10

- (i) Dynamic model
- (ii) Scenario
- (iii) Persistency
- (iv) Data hiding
- (v) Metaclass.

- (b) Write an instance diagram for the expression 5

$$\begin{pmatrix} a & b \\ 2 & 3 \end{pmatrix} \text{-----} \begin{pmatrix} c & d & e \\ 4 & 5 & 6 \end{pmatrix}.$$

The use of parentheses is not required in the instance diagram.

- (c) Draw a DFD for student registration system generally followed in IGNOU. 5
4. (a) Draw an object model to describe undirected graph. An undirected graph consists of a set of vertices and a set of edges. 5
- (b) What is the advantage of two way association ? Explain, it can be implemented using an example. 6
- (c) What are the benefits of object oriented modeling ? Explain. 4
- (d) Describe how are the constraints implemented ? 5
5. (a) How do you map ternary association to tables ? Illustrate. 5
- (b) What is design optimization ? Does the rearrangement in execution order affect the design ? 5
- (c) Write a state diagram for cancellation of airlines ticket. 5
- (d) What is a sequence diagram ? Explain through an example. 5

- o O o -

