MCA (Revised)

Term-End Examination
December, 2009

11217

MCS-032 : OBJECT ORIENTED ANALYSIS AND DESIGN

Time : 3 Hours *Maximum Mark : 100*

Note : *Question number **1** is **compulsory**. Answer **any three** questions from the rest.*

Classify each of the following :

1. (a) Relationship as either a class, an instance of a class, inheritance relationship, an aggregation relationship and a general association relationship 5

(i) Employee

(ii) Computer Science Department

(iii) Class - Students

(iv) Person - Part time worker

(v) Students - Book loan

(b) Draw a state diagram for a stock showing error messages. 5

(c) A general store wants to automate its inventory. It has points of sale terminals that can record all of the items and quantities that a customer purchases. It has another terminals in the loading dock to handle arriving shipments from suppliers. It has one more terminal to enter losses/ discounts due to spoilage.

Perform the following tasks :

(i) Find out list of objects 5

(ii) Draw a class diagram 5

(iii) Draw an object diagram 5

(iv) Draw an use case diagram 5

Note : Make assumptions, wherever necessary.

(d) What functions are important to include in use case diagram. Explain through an example. 5

(e) What is serialization ? Why it is not useful when large volume of data needs to be stored ? 5

2. Differentiate between the following : **5x4=20**

(a) Link and reference

(b) Generalization and specialization

(c) Sequence Diagram and collaboration diagram

(d) Functional modeling and dynamic modeling

(e) Aggregation and Association

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

(i) Metadata

(ii) Abstract class

(iii) Concurrency

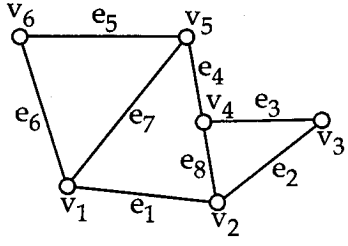
(iv) Event

(v) Data Dictionary

(b) Define object interoperability. Also, explain where is it used and why ? 5

(c) Draw a DFD for a general store problem (Refer to Q1(c)) 5

4. (a) Draw an instance diagram for the following undirected graph : 5



(b) What is multiplicity in association ? Give an example to explain the answer. 5

(c) What is the purpose of structural diagram in UML ? Also explain the use of component and deployment diagrams. 5

(d) Explain, how an optional association can be implemented using class. Explain with an example. 5

5. (a) How do you map ternary associations to table ? Illustrate. 5

(b) What is persistency ? Explain with an example, how persistent data are identified? 5

(c) Write a state diagram for purchaging a rail ticket. 5

(d) What is an activity diagram ? Explain through an example 5

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