MCS-032

MCA (Revised)
Term-End Examination
December, 2014

01954

MCS-032 : OBJECT ORIENTED ANALYSIS AND DESIGN

Time : 3 hours   *Maximum Marks : 100*

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

1. (a)   Is there any relationship between DFD and ERD ? Discuss with the help of a suitable example.   5

    (b)   What are the various models developed in UML ? Which model is most important ? Give suitable reasons in support of your answer.   5

    (c)   Explain the use of constraints in functional model, with the help of suitable examples.   5

    (d)   What is a composition and what is its relation with aggregation ?   5

(e) Draw Instance diagram for the following undirected graph, where e_1, e_2, e_3, e_4, e_5 are the edges connecting the vertices v_1, v_2, v_3 and v_4.   *5*
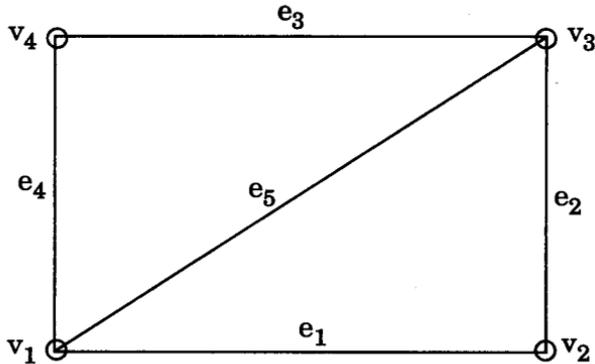
(f) What functions are important to include in usecase diagram ? Explain through an example.   *5*

(g) A department wants to schedule meetings. There may be various kinds of meetings such as, meetings related to purchase committee, syllabus design committee etc. There is a list of members along with their addresses, for different meetings. Scheduling of meeting needs a room of sufficient size at a defined date and time. The members are informed through emails. Prepare a class diagram for the given scenario.   *10*

2. (a) Justify that "Aggregation is a special form of Association." Use suitable example to justify your answer. 7

(b) Prepare a state diagram for online chatting, considering the concurrency control. 6

(c) What is polymorphism ? Explain the different types of polymorphism, with suitable examples. 7

3. (a) What is a collaboration diagram ? What is the importance of a collaboration diagram ? Draw a collaboration diagram for railway ticket reservation system. 7

(b) What is the utility of usecase diagram ? Explain various notations used in usecase diagram. Create a usecase diagram for Bank ATM system. 7

(c) Write short notes on any *two* of the following : 6

(i) Integrity Constraints

(ii) Concurrent Environment

(iii) Deployment Diagram and its use

4. Differentiate between the following : *5×4=20*

(a) Link and Reference

(b) Generalization and Specialization

(c) Sequence diagram and Collaboration diagram

(d) Functional modelling and Dynamic modelling

(e) Composition and Association

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

(b) What is persistency ? Explain with an example. How can persistent data be identified ? *5*

(c) Explain, giving an example, how "rearranging the execution order of the activities" will affect the efficiency of the system. *5*

(d) Compare and contrast the RDBMS with object oriented database. *5*