(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 2166   **Roll No.** [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

B.Tech.

(SEM. V) ODD SEMESTER THEORY EXAMINATION 2012-13

OBJECT ORIENTED TECHNIQUES

Time : 3 Hours   *Total Marks : 100*

Note :   *(1) Attempt **all** questions.*

   (2) Make suitable assumptions if required.

1.   Answer any **two** parts :   **(10×2=20)**

   (a)   (i)   What do you mean by object oriented techniques ? Explain with some example.

      (ii)   Discuss the concept of encapsulation with suitable example.

      (iii)   Describe the pros and cons of unified modeling language (UML).

   (b)   (i)   Give the conceptual model of UML. Use some example to illustrate the model in detail using diagram.

      (ii)   Define link and association. Discuss the role of link and association in object modeling with suitable example.

   (c)   (i)   Define aggregation generalization. Explain.

      (ii)   What do you mean by polymorphism ? Explain it with an example.

2.   Answer any **two** parts :   **(10×2=20)**

   (a)   What is the difference between a class diagram and an instance diagram ? Discuss the significance of each. Also

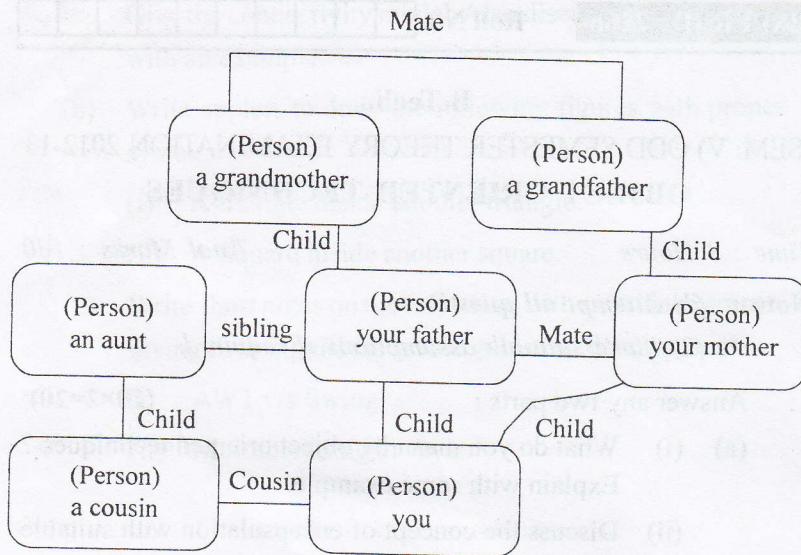prepare a class diagram for the following instance diagram as given in Figure 1 :

Mate

Figure 1

(b) Discuss the significance of sequence diagrams. How the following is implemented using sequence diagrams :

(i) broadcast messages

(ii) callback mechanism

(iii) asynchronous messages with/without priority.

(c) (i) Write short notes on architectural modeling with suitable example and diagrams.

(ii) Categorize the following relationship into generalization, aggregation, or association :

(1) A country has a capital city

(2) Files contain records.

3. Answer any **two** parts : (10×2=20)

   (a) Describe the following with example :

     (i) Passing arguments to methods.

     (ii) Features of object oriented languages.

     (iii) Implementation of Inheritance.

   (b) (i) What do you mean by the optimization of design ? Discuss the design optimization with suitable example using diagrams.

     (ii) Describe the structured analysis and structured design approach with an example.

   (c) Write short notes on the following :

     (i) Compare procedural programming with object oriented programming with examples.

     (ii) Write a short note on Jackson Structured Development (JSD).

4. Answer any **two** parts : (10×2=20)

   (a) What is the significance of data types in a programming language ? Describe the various data types used in Java. Also compare C++ and Java.

   (b) (i) Write a program in Java to display the longest word in a given sentence of at least having 9 words.

     (ii) Design a class using Java to create a singly linked list. Then also write the methods for adding a node to the linked list in the beginning and also to search a given node.

   (c) Write in short on the following with suitable example in Java and explaining their significance :

     (i) Session beans and Entity beans.

     (ii) Java APIs.

5. Answer any **two** parts :   (10×2=20)

    (a) What do you understand by the database connectivity ?
        Give the connectivity model. Also discuss JDBC in detail
        with an example.

    (b) Write applets to draw the following figures with proper
        syntax :

        (i)   A triangle inside another triangle.

        (ii) A Square inside another square.

    (c) Write short notes on the following with suitable examples
        giving their significance in application development :

        (i)   AWT v/s Swing.

        (ii) Multithreading in Java.