

C5-R3: OBJECT ORIENTED METHODOLOGY

NOTE:

1. Answer question 1 and any FOUR questions from 2 to 7.
2. Parts of the same question should be answered together and in the same sequence.

Time: 3 Hours

Total Marks: 100

1.
 - a) Explain the terms 'Abstraction' and 'Encapsulation'?
 - b) What is the difference between 'Infinity' and 'NaN'? If we have some number say 'a' of integer type, give the methods to identify it, whether it is 'Infinity' or 'NaN'?
 - c) What are 'reference variables' and 'instance variables'? What are differences between these? Explain the working of following lines of code:-

```
Class1 C1=new Class1 ();  
Class1 C2=C1;  
C1=null;
```

- d) What is Garbage Collection? How Garbage Collector do this?
 - e) If we want to make some variables read only, than how can we do this in Java? Give example.
 - f) Explain the terms 'Dynamic loading' and 'Dynamic binding'?
 - g) Define with examples the following:
 - i) Class and Object.
 - ii) Abstract Class.
 - iii) Interface
 - iv) Inline function

(7x4)

2.
 - a) Explain Different class Access-Specifiers used in JAVA?
 - b) How does JAVA do remote invoking?
 - c) Explain OMT in detail?

(6+6+6)

3.
 - a) Can we declare an array of an object in JAVA? What is the advantage of it?
 - b) What is event handling? Differentiate Adapter to Listener.
 - c) How do we achieve call by reference in Java as there are no pointers in Java?

(6+6+6)

4.
 - a) What are differences between multiple-inheritance and multilevel-inheritance? How can JAVA overcome the problem of multiple-inheritance?
 - b) What is Multi Threading? Explain Synchronization of Threads?
 - c) What is InetAddress? What is the importance of it in networking? Explain networking in JAVA with example?

(6+6+6)

5.

- a) What is 'Color' object in Java? Can we change the Background and Foreground color at runtime? If, yes, than how?
- b) Explain update () method used in Applet? How it is differ from paint () method used in Java?
- c) What is Layout Manager? What happens when we pass 'null' instead of Layout object in setLayout() method? Is any advantage of this? Justify?

(6+6+6)

6.

- a) What is JDBC? How can it handle database? How PreparedStatement is differing from Statement Object?
- b) Is servlet multi-threaded? Justify your answer.
- c) What is ORB? Explain its functions with a suitable example.

(6+6+6)

7.

- a) Explain the following concepts and discuss how they are related to each other: encapsulation, message passing, visibility.
- b) What is Java Bean? Explain Persistence and its uses.
- c) Discuss the similarity and differences in C++, Java and Small Talk with respect to their support for static typing, message dispatch, inheritance and polymorphism.

(6+6+6)