Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/B.TECH/CSE (NEW)/SEM-5/CS-504 D/2013-14

2013

OBJECT ORIENTED PROGRAMMING

Time Allotted : 3 Hours *Full Marks* : 70

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following : $10 \times 1 = 10$

i) Which three form part of correct array declarations ?

1. public int a [ ]
2. static int [ ] a
3. public [ ] int a
4. private int a [3]
5. private int [3] a [ ]
6. public final int [ ] a

a) 1, 3, 4 b) 2, 4, 5

c) 1, 2, 6 d) 2, 5, 6.

ii) public class Test { }

What is the prototype of the default constructor ?

a) Test ( ) b) Test (void)

c) public Test ( ) d) public Test (void).

iii) What is the most restrictive access modifier that will allow members of one class to have access to members of another class in the same package ?

a) public b) abstract

c) protected d) synchronized

e) default access.

iv) Which cause a compiler error ?

a) int [ ] scores = {3, 5, 7};

b) int [ ] [ ] scores = {2,7,6}, {9,3,45};

c) String cats [ ] = {"Fluffy", "Spot", "Zeus"};

d) boolean results [ ] = new boolean [ ] {true, false, true};

e) Integer results [ ] = {new Integer (3), new Integer (5), new Integer (8)};

v) Which three are valid method signatures in an interface ?

1. private int getArea();
2. public float get Vol(float x);
3. public void main (String [] args);
4. public static void main (String [] args);
5. boolean setFlag (Boolean [] test);

a) 1 and 2 b) 2, 3 and 5

c) 3, 4, and 5 d) 2 and 4.

vi) You want a class to have access to members of another class in the same package. Which is the most restrictive access that accomplishes this objective ?

a) public b) private

c) protected d) default access.

vii)
```
class A
{
 protected int method 1 (int a, int b)
 {
     return 0;
 }
}
```

Which is valid in a class that extends *class A* ?

a) public int method 1 (int a, int b) {return 0; }

b) private int method 1 (int a, int b) {return 0; }

c) public short method 1 (int a, int b) { return 0; }

d) static protected int method 1 (int a, int b) { return 0; }.

viii) Which is a valid declaration within an interface ?

a) public static short stop = 23;

b) protected short stop = 23;

c) transient short stop = 23;

d) final void madness (short stop) ;

ix) Which two cause a compiler error ?

1. float [ ] f = new float (3);
2. float f2[ ] = new float [ ];
3. float [ ]f1 = new float [3];
4. float f3 [ ] = new float [3];
5. float f5 [ ] = {1.0f, 2.0f, 2.0f};

a) 2, 4 b) 3, 5

c) 4, 5 d) 1, 2.

x) What is the narrowest valid return Type for method A in line 3 ?

```
public class ReturnIt
{
   return Type method A (byte x, double y)/* Line 3 */
   {
      return (long)x/y * 2;
   }
}
```

a) int b) byte

c) long d) double.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. What are the two methods to create threads ? Compare them. Explain them with an example Java program. 2 + 3

3. Explain Function overloading with an example.

4. What is class ? How does it accomplish data hiding ? 2 + 3

5. What is constructor ? What does the finalize method do ? 2 + 3

6. What is delegation model in Java Applet ?

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. Discuss the differences between the following : 5×3

   i) 'throw' and 'throws' clause

   ii) Abstract classes and Interfaces

   iii) Applet and Application programming in java

   iv) Method overloading and method overriding

   v) final and finally.

8. a) Discuss the garbage collection procedure in java. What is the difference between processes and threads ? 2 + 2

   b) Explain how user defined exception objects can be created and thrown. 5

   c) Explain how parallel child threads can be created from the parent thread ? Give programme code to support your answer. 6

9. a) Discuss the Applet life Cycle methods with their functionalities ? 5

   b) Explain the parameter passing mechanism using an applet programme ? 5

   c) What do you mean by 'Dynamic Method Dispatch' ? What is the difference between default access specifier and public access specifier ? 3 + 2

10. a) What will be the output of the following programme code ? Explain your answer.

```
class A {void show () {system. out.println ("Inside show of A");}}

class B extends A {void show () {super.show (); System.out.println("Inside show of B");} }

class demo {

public static void main (String args []){

A a1 = new B(); a1.show();

} }
```

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b) Discuss the following terms : 3 × 2

i) Association

ii) Aggregation

iii) Meta-class.

c) Explain whether java supports multiple inheritance or not. What do you mean by JVM ? 3 + 2

11. a) Discuss the role of the following methods in java : 5 × 2

i) public void join () throws Interrupted Exception

ii) getDocumentBase ()

iii) getCodeBase ()

iv) String int length ()

v) boolean equals (String str)

b) Discuss the Exception class hierarchy stating from the 'Throwable' class. Explain the differences between the 'private' and 'protected' access specifier in java. 3 + 2