CS/B.Tech/IT (NEW)/SEM-4/IT-401/2013

2013
OBJECT ORIENTED PROGRAMMING AND UML

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)   int i = 2 ;

         System.out.println ("welcome" + 1 + 2) ;

         The Output is :

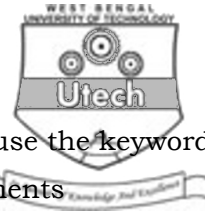   a)   welcome3   b)   welcome12

         c)   compiler error   d)   none of these.

   ii)   Which of the following is known as short-circuit and operator ?

         a)   &&   b)   &

         c)   ?&   d)   None of these.

   iii)   A constructor can be inherited using the keyword

         a)   Final   b)   Static

         c)   Super   d)   None of these.

4404   [Turn over

iv) To inherit an interface from a class, we use the keyword

    a)   extends   b)   implements

    c)   both (a) & (b)   d)   none of these.

v) In java applet, Stop () method can be invoked for a thread

    a)   once   b)   twice

    c)   compiler error   d)   not at all.

vi) Consider the following statements :

int a[ ] = new int [3];

a[3] = 7;

System.out.println(a[3]);

The output is

    a)   3   b)   7

    c)   Compiler error   d)   Run time error.

vii) Dynamic method dispatcher is used for

    a)   resolving method overriding

    b)   resolving multilevel inheritance

    c)   resolving multiple inheritance anomally

    d)   none of these.

viii) How many default constructors can a class have, when it has constructor ?

    a)   1   b)   0

    c)   2   d)   Any number.

ix) String s = "WBUT";

System.out.println(s.char At(2));

The output is

    a)   U   b)   Exception occurs

    c)   2   d)   B.

x) What is the return type of read ( ) method of Input-Stream class ?

   a) String   b) Void

   c) Float   d) None of these.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following.   3 × 5 = 15

2. What is byte code ? What does the JVM do ? Why is Java called platform independent language ?   1 + 2 + 2

3. a) Explain interface with example.

   b) What do you mean by garbage collection in Java ?

4. What is the base class of Error and Exception ? Differentiate between throw and throws.   1 + 4

5. Explain different access specifiers in Java.   5

6. Differentiate between the following :

   a) Method overloading and method overriding

   b) Object and object reference. $2\frac{1}{2} + 2\frac{1}{2}$

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following.   3 × 15 = 45

7. a) Distinguish between Data Encapsulation and Data Abstraction.

   b) Explain "public static void main (String [] args)" in java.

   c) Why do we need constructor ? Write a program to illustrate the use of constructor in java.   3 + 3 + 2 + 7

8. a) What is wrapper class ?

   b) Compare and contrast abstract class and interface with example.

   c) Discuss different types of inheritance with example.

   d) How does String class differ from String Buffer. Write a program to reverse a string using String class.

   2 + 3 + 4 + (2 + 4)

9. a) What is an Exception ?

   b) Explain the differences between Error and Exception.

   c) What is the use of "finally" block ?

   d) Define an exception called "NO Match Exception" that is thrown when a string is not equal to "India". Write a program that uses the exception.   2 + 3 + 3 + 7

10. a) What is Thread ?

    b) How Thread can be implemented in Java.

    c) Describe the life cycle of Thread.

    d) Write a program to describe inter Thread communication.   1 + 3 + 4 + 7

11. Write Short notes on any *three* of the following :   3 × 5

    a) AWT

    b) Applet

    c) Inner class

    d) Activity diagram

    e) Synchronisation.

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