CS/B.TECH/IT/EVEN/SEM-4/IT-401/2015-16

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Paper Code : IT-401

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) Because finalize () belongs to the java.lang.Object class, it is present in all
   a) objects
   b) classes
   c) methods
   d) variables.

ii) Which are keywords in Java ?
   a) NULL
   b) size of
   c) extends
   d) friends.

iii) The immediate super class of the Applet class is
   a) Panel
   b) Interface
   c) Object
   d) Window.

iv) The method used in Java which waits for the Thread to die is
   a) wait ()
   b) destroy ()
   c) die ()
   d) join ()

v) Size of Unicode is
   a) 2 bits
   b) 8 bits
   c) 16 bits
   d) none of these.

vi) JVM is
   a) A Java package
   b) A Java compiler
   c) A Java interface
   d) A system software.

vii) Dead thread can be accessed using
   a) start()
   b) recreate()
   c) notify()
   d) none of these.

viii) An interface can define only
   a) abstract class
   b) final field
   c) abstract method
   d) abstract method and final field.

ix) Delegation model is associated with
   a) Exception handling
   b) AWT
   c) Event handling
   d) None of these.

x) abstract class xy
   {
   abstract sum (int x, int y) { }
   }
   a) class header is not defined properly
   b) no error
   c) method is not defined properly
   d) constructor is not defined.

GROUP – B

(Short Answer Type Questions)

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

2. What is the relation between association and aggregation ? Explain recursive aggregation with example.   2 + 3

3. What is the difference between method overloading and method overriding ? Explain with an example.

4. Illustrate the use of this and super with an example.

     2 + 3

5. What are the differences between default constructor and parameterised constructor ? Explain with example.

6. Why is UML called modelling language ? What are the primary goals of UML ?

GROUP – C

(Long Answer Type Questions)

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

7. a) Justify the difference between final, finally and finalize.

     b) Why Java is called 'strongly typed' programming language ? What is meta-class ?

     c) What do you mean by garbage collection in Java ? Describe major and minor elements of Object Oriented Analysis.   5 + (4 + 1) + (3 + 2)

8. a) Explain "public static void main (String args [ ]" in brief. What is wrapper class ?

     b) What is byte-code ? What does the JVM do ? Why Java is called compiler-interpreter language ?

     c) Discuss Applet life-cycle indicating the functions.

     (3 + 2) + (1 + 2 + 2) + 5

9. a) What is the difference between "= =" and ".equals ()" in context of sting objects ?

     b) Differentiate between 'throw' and 'throws'. What is final keyword ?

     c) How do we define try and catch block ? Is it essential to catch all types of exceptions ? Explain.

     5 + (3 + 2) + (3 + 2)

10. a) What is an interface ? What are the differences between interface and abstract class ?

     b) How is inheritance incorporated in Java ? Is it possible in Java to implement multiple inheritances ? If not, then how is it possible ? Explain.

     c) What is multi-threading ? Write a program which can run a main thread and child thread simultaneously.   (3 + 2) + 5 + (1 + 4)

11. Compare the following (Any *three*) :   3 × 5 = 15

     a) Early binding and late binding

     b) Object and object reference

     c) Error and Exception

     d) String class and String Buffer class.