MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

Paper Code : BCAE-602B

OBJECT ORIENTED PROGRAMMING WITH JAVA

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)

1×10=10

1. Choose the correct alternatives for the following:

   (i) Which type of polymorphism is nothing but the method overloading in Java?

      (a) Compile time polymorphism
      (b) Runtime polymorphism
      (c) Static polymorphism
      (d) Both (a) and (c)

   (ii) Which of the following is true about private access modifier?

      (a) Variables, methods and constructors which are declared private can be accessed only by the members of the same class.

      (b) Variables, methods and constructors which are declared private can be accessed by any class lying in same package.

      (c) Variables, methods and constructors which are declared private in the superclass can be accessed only by its child class.

      (d) None of the above

   (iii) Which of the following statements regarding abstract classes are true?

      (a) An abstract class can be extended.

      (b) A subclass of a non-abstract superclass can be abstract.

      (c) A subclass can override a concrete method in a superclass to declare it abstract.

      (d) An abstract class can be used as a data type.

      (e) All of the above

Turn Over

(iv) Which of the following is a correct interface?

(a) interface A {void print() {}

(b) abstract interface A {print(); }

(c) abstract interface A {abstract void print(); {}} (d) interface A {void print(); }

(v) Dynamic method dispatcher is used for

(a) resolving method overriding

(b) resolving multilevel inheritance

(c) resolving multiple inheritance

(d) None of these

(vi) What is runtime polymorphism?

(a) Runtime polymorphism is a process in which a call to an overridden method is resolved at runtime rather than at compile-time.

(b) Runtime polymorphism is a process in which a call to an overloaded method is resolved at runtime rather than at compile-time.

(c) Both (a) and (b)

(d) None of the above

(vii) Which of the following is the main use of package?

(a) Categorizes data

(b) Make compiling factor

(c) Resolve name conflicts

(d) None of these

(viii) Which method is used in thread class to test if the current thread has been interrupted?

(a) public static Boolean interrupted()

(b) public Boolean is interrupted()

(c) public void interrupt()

(d) public Boolean is Alive()

(ix) Which are also known as inner classes?

(a) Non-static nested class

(b) Static nested class

(c) Nested class

(d) None of these

(x) An exception is

(a) run time error

(b) machine error

(c) compile time error

(d) None of these

Group – B

(Short Answer Type Questions)

Answer *any three* questions: 5×3=15

2. (a) "Java is a strongly typed programming language"— Comment.
    (b) What is the significance of volatile keyword in Java?   2+3=5

3. (a) "Java does not support destructors"— Discuss.
    (b) What is the difference between abstract class and interface?   2+3=5

4. What is garbage collection in Java?   5

5. Write a java code to input a number and show whether it is an Armstrong number or not.   5

6. (a) What is encapsulation?
    (b) What is data hiding?
    (c) What are the types of visibility of class objects?   1+1+3=5

Group – C

(Long Answer Type Questions)

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

7. (a) What is method overloading? What are the important point which should be taken care of while overloading method?
    (b) What is polymorphism? How is it implemented? Show through an example the implementation of a polymorphism.
    (c) What is this keyword? How is it different from a super keyword?   (2+3)+(2+1+4)+(1+2)=15

8. (a) Discuss the life cycle of a thread.
    (b) Discuss different ways of creating thread with their relative merits and demerits.
    (c) What is a local applet? How does it differ from remote applet?   5+5+(2+3)=15

9. (a) What is multilevel inheritance? How does it differ from multiple inheritance? Also give an example of multiple inheritance.
    (b) Differentiate between Final and Abstract.
    (c) What is the difference between keyword throw and throws?
    (d) Differentiate between checked and unchecked exceptions.   (2+2+4)+3+2+2=15

10. (a) What is stream? Differentiate between stream source and stream destination.
    (b) Differentiate between an interface and abstract class.
    (c) What are packages? Explain the steps to create to packages?
    (d) Discuss each part of the statement System.out.println();   (1+2)+4+(2+3)+3=15

3

11. Write short notes on *any three* of the following: 5×3=15

    (a) try, catch & finally block

    (b) Thread priority

    (c) String Buffer Class

    (d) Object Oriented Paradigm

    (e) Vector Class