WEST BENGAL UNIVERSITY OF TECHNOLOGY

BCAE-602B

OBJECT ORIENTED PROGRAMMING WITH JAVA

Time Allotted: 3 Hours

Full Marks: 70

The questions are of equal value.
The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as
practicable. All symbols are of usual significance.

GROUP A
(Multiple Choice Type Questions)

1. Answer *all* questions.

    $10 \times 1 = 10$

    (i) Which is a reserved word in the java programming language?

    (A) Method
    (B) Native
    (C) Subclasses
    (D) Reference

    (ii) What is byte code in the context of java?

    (A) The type of code generated by a Java compiler

    (B) The type of code generated by a Java Virtual Machine

    (C) It is another name for a Java source file

    (D) It is the code written within the instance methods of a class

(A) The 'try' block should be followed by a 'catch' block

(B) The 'try' block should be followed by a 'finally' block

(C) The 'try' block should be followed by either a 'catch' block or a 'finally' block

(D) The 'try' block should be followed by at least two 'catch' blocks

(iv) JVM stands for

(A) Java Virtual Machine   (B) Java Visual Machine

(C) Java Vision Machine   (D) None of these

(v) To inherit an class from a class, we use the keyword

(A) extends   (B) implements

(C) both (A) and (B)   (D) none of these

(vi) An interface can define only

(A) abstract class

(B) final field

(C) abstract method

(D) abstract method and final field

(vii) In java applet, start() method may be invoked

(A) once   (B) twice

(C) many times   (D) not at all

(viii) An exception is a/an

(A) runtime problem   (B) compile time problem

(C) entity dependent on type   (D) none of these

(ix) Which keyword is used in Java to define a constant

(A) static   (B) final

(C) public   (D) none of these

x) String s= "WBUT"
System.out.println(s.charAt(2));
The output is

(A) U

(B) Exception occurs

(C) 2

(D) B

GROUP B
(Short Answer Type Questions)

Answer any *three* questions.   3×5 = 15

2.   Differentiate between final, finally and finalize in Java.   5

3.   How multilevel inheritance is done in Java? Show with   3+2
      example. Also show calling sequence of constructors.

4.   What is the difference between function overloading and   3+2
      function overriding? Explain with an example.

5.   "Java is a platform independent Language"– Justify the   3+1+1
      statement. What is super? What is final modifier?

6. (a) Describe life cycle of applet.   3+2

   (b) What is a wrapper class?

GROUP C
(Long Answer Type Questions)

Answer any *three* questions.   3×15 = 45

7. (a) Discuss the importance of inheritance with the help of an   4
       example.

   (b) Write a program that reads in the radius of a circle and then   3
       computes its area.

(c) Distinguish between the following terms:
   (i) Abstract Class and Interface
   (ii) 'throws' and 'throw'

(d) What are the properties of a constructor? Explain the use of overloaded constructors with the help of an example.

8. (a) What is dynamism in the context of the object oriented programming paradigm? What are the different types of dynamism existing in the object-oriented programming paradigm? Explain each type with the help of an example.

(b) Write a program to demonstrate the concept of abstract and runtime polymorphism.

9. (a) What is destructor? Give examples.

(b) How exceptions are handled in Java? Give examples.

(c) When do we design an Interface? Discuss

10. (a) Write a program in Java to print the Fibonacci series.

(b) How does Java differ from C^{++}?

(c) What is the importance of naming conventions in packages? What is local applet?

11. Write short notes on any *three* of the following: 3

(a) Dynamic Method Dispatch

(b) Abstract Window toolkit

(c) Garbage collection

(d) Thread priority

(e) Serialization and deserialization in Java