# BCA-C–404

## B. C. A. (Fourth Semester)
## EXAMINATION, 2023-24

PROGRAMMING IN JAVA

*Time : 2½ Hours*

*Maximum Marks : 60*

**Note :** All questions have to be attempted.

### Section—A

1.  Multiple Choice Type Questions :            1 each

    (i)   Which statement is used to compile the 'First.java' file in command prompt ?

    (CO1, BL-1)

    (a)   java First.java

    (b)   javac First.java

    (c)   cjava First.java

    (d)   java compile First.java

(ii) Which keyword is used to invoke parent class constructor ?                          (CO1, BL-1)

   (a)   this

   (b)   final

   (c)   parent

   (d)   super

(iii) Which area is used by JVM to store object data ?

(CO1, BL-1)

   (a)   stack area

   (b)   heap area

   (c)   method area

   (d)   None of the above

(iv) What will be the output of the program ?

(CO2, BL-4)

String x = "xyz";

x.toUpperCaseQ;

String y = x.replace('Y', 'y');

y = y + "abc";

System.out.println(y);

   (a)   abcXyZ

   (b)   abcxyz

   (c)   xyzabc

   (d)   XyZabc

(v)   What is the extension of byte code file ?

(CO1, BL-1)

   (a)   .exe

   (b)   .java

   (c)   .byte

   (d)   .class

(vi)  Late Binding is also known as :   (CO1, BL-1)

   (a)   compile time polymorphism

   (b)   runtime polymorphism

   (c)   dynamic polymorphism

   (d)   Both (b) and (c)

(vii) println( ) is a method of which class ?

(CO1, BL-1)

   (a)   Scanner

   (b)   System

   (c)   Print

   (d)   Print Stream

(viii) What will be the output of the program ?

(CO2, BL-5)

```
public static void main (String[] args)
{
    int[] arr={10,3,4,5}
    for(int i=3;i<arr.length;i++)
    {
            If(arr[i]>arr[i+1])
            {
            }
    }
}
```

   (a)   nothing will print

   (b)   compile time error

   (c)   run time error

   (d)   None of the above

(ix)  What will be the output of the program ?

(CO2, BL-5)

```
class A
{
    public A(int x){ }
}
class B extends A { }
public class test
{
    public static void main (String args [])
    {
        A a = new B();
        System.out.println("complete");
    }
}
```

   (a)   Compile Time Error

   (b)   Run Time Error

   (c)   Nothing will print

   (d)   Complete

(x)  Which method is used to start the execution of the thread ?                    (CO1, BL-1)

    (a)  run ()

    (b)  begin ()

    (c)  getstart ()

    (d)  start ()

(xi)  Which statement is false ?          (CO1, BL-1)

    (a)  JDBC stands for Java database Connectivity

    (b)  JDBC is a Java API to connect and execute the query with the database.

    (c)  It is not part of JavaSE

    (d)  JDBC API uses JDBC drivers.

(xii) What will be the output ?          (CO2, BL-5)

```
int i = 1, j = 10;
do
{
   if(i++> --j) /* Line 4 */
   {
      continue;
   }
} while (i < 5);
System.out.println("i = " + i + "and j = " + j);
```

    (a)  i = 5 and j = 6

    (b)  i = 6 and j = 5

    (c)  i = 5 and j = 5

    (d)  i = 6 and j = 6

**P. T. O.**

2.  Write short notes on any *four* :          3 each

    (a)  Why we call abstract class is achieve partial abstraction ? Give an example also.  (CO1, BL-3)

    (b)  Why string is immutable ? Explanation with example.                    (CO1, BL-1)

    (c)  What are the three properties of the final keyword ?

                                    (CO1, BL- 1)

    (d)  Write a java program to count total number of 'is' words in a string.          (CO1, BL-2)

    (e)  What are the five steps to connect any java application with the database using JDBC.

                                    (CO4, BL-4)

## Section—B
## (Long Answer Type Questions)

3.  Attempt any *two* of the following :          6 each

    (a)  Explain the internal structure or details of JVM with proper diagram.          (CO1, BL-1)

    (b)  What is abstraction ? Through which 2 ways we can achieve abstraction ? What is abstract class ? Write a java program to create two abstract methods in a class named as "area () and "volume Q". Creating another class named as "Cuboid" inherits the class in which two abstract methods define and calculate the area and volume of a cuboid.                    (CO5, BL-6)

(c)   How string builder and string buffer class differs from string ? Explain any *five* inbuilt methods of string buffer class with the help of an example.

(CO2, BL-2)

4.   Attempt any *two* of the following :                    6 each

(a)   How method overloading differs from overriding ? Explain with the help of an example. Write a java program to check how many vowels are in odd location in a string.                    (CO2, BL-3)

(b)   What is multithreading and why multithreading is required in java ? Explain the life cycle of a thread. Write a java program to create a thread through interface.                    (CO5, BL-6)

(c)   How an Interface achieve fully abstraction and multiple inheritance ? Explain with an example. Write a java program to calculate the multiplication of two matrix.                    (CO5, BL-6)

5.   Attempt any *two* of the following :                    6 each

(a)   What is swing in java ? How does java swing differ from AWT ? Draw the hierarchy of java swing APT. Write a java program to create one button named as "click here" and display "java is a programming language" when user click on button "click here".                    (CO 3, BL-6)

(b)   What is an exception ? Why is exception handling required ? How exception can be handled ? Write a java program to demonstrate the use of finally block and throw keyword to handle the exception.

(CO5, BL-6)

(c)   What is JDBC ? Explain types of JDBC. Write a java program to create a table named as employee with fields empid, empname and salary. Insert three records inside the employee table.

(CO4, BL-6)