



GIET UNIVERSITY, GUNUPUR - 765022
B. Tech (Third Semester) Examinations, December - 2023
Object Oriented Programming through Java
21BCSPC23002 / 22BCSPC23002
(CSE,CSE(AIML),CSE(DS))

Time: 3 hrs

Maximum: 70 Marks

(The figures in the right hand margin indicate marks)

PART – A**(2 x 5 = 10 Marks)**Q.1. Answer ***ALL*** questions

- a. Predict the output :

```

class test
{
    public static void main(String a[])
    {
        int i=1,j=10;
        do
        {
            if (i++ > --j) { continue; }
        }while(i<5);
        System.out.println(i+ "GIET" +j);
    }
}
  
```

- b. Why is Java called a platform-independent language?

CO 1 K1

- c. Write a Java program to read a sentence and display it by inserting * in place of space.

CO3 K1

- d. How many String objects will be created?

CO2 K1

```

String S1 = new String("Java");
String S2 ="Program";
S1 = S1 + S2;
  
```

- e. Describe the methods (1) setBackground() (2) setForeground() with their syntax.

CO4 K1

PART – B**(15 x 4 = 60 Marks)**Answer ***ALL*** questions

Marks	CO #	Blooms Level
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2. a. Describe JVM and explain and draw the Architecture of JVM.

8 CO1 K1

- b. Write a program to receive a color code from the user (an Alphabet). The program should then print the color name, based on the color code given. The following are the color codes and their corresponding color names.

7 CO1 K2

R->Red, B->Blue, G->Green, O->Orange, Y->Yellow, W->White. If color code provided by the user is not valid then print "Invalid Code".

(OR)

- c. Explain the basic characteristics of object-oriented programming. Write a program to read a number using a command line argument and check whether it is even or odd.

8 CO1 K2

- d. Write a program to initialize an integer array with values and check if a given number is present in the array or not. If the number is not found, it will print -1 else it will print the index value of the given number in the array. 7 CO 1 K1
- 3.a. Write a program to read an input String from the user and parse it to an integer, if it is not a number it will throw NumberFormatException, Catch it, and print "Entered input is not a valid format for an integer." or else print the square of that number. 8 CO2 K1
- b. Explain any three usages of “**this**” keyword with an example of each. 7 CO2 K2
 (OR)
- c. Explain the following method used in StringBuffer class with examples. 8 CO2 K2
 (i) append() (ii) insert() (iii) replace() (iv) delete() (v) length()
- d. What is method overloading in Java? List out all the conditions of method overloading. Write a program to overload **area()** method, which will calculate the area of a rectangle and square. 7 CO2 K1
- 4.a. Write a program to create two threads, one thread to display all even numbers between 1 & 20, and another thread to display odd numbers between 1 & 20.
Note: Display all even numbers followed by odd numbers 8 CO3 K1
- b. What is user-defined Exception in Java? Write a program to accept student age and check whether he is eligible to vote or not (Using user-defined exception)? Note : Show an appropriate message when the age is not eligible. 7 CO3 K2
 (OR)
- c. Create a class called Employee with properties name(String), department(String), designation(String), and Salary(double). Create respective getter and setter methods and constructors (no-argument constructor and parameterized constructor) for the same. Create an object of the Employee class and save this object in a file called "data" using serialization. Later using deserialization read this object and print the properties of this object. 8 CO3 K1
- d. What is synchronization? Explain the role synchronized method with a suitable example. 7 CO3 K2
- 5.a. Write a program to draw the following in an applet 8 CO4 K1
 - rectangle (filled with blue color)
 - oval (filled with red color)
 - elliptical arc (green color)
- b. Write an applet program to implement the painting application using the MouseMotionListener interface. 7 CO4 K1
 (OR)
- c. Write a program to create two checkboxes “JAVA” and “PYTHON”. Design two labels that will display checkbox contents when selected. 8 CO4 K1
- d. Write a program to input 2 numbers into two TextFields. Display the sum of them in another TextField when the button is clicked. 7 CO4 K1