

Enrollment No: E21CSE110804
 Name of Student: _____
 Department/ School: _____

SECOND SEMESTER END-TERM EXAMINATION 2021-22

COURSE CODE:	CSET104	MAX. DURATION:	2 HRS
COURSE TITLE:	OBJECT ORIENTED PROGRAMMING USING JAVA		
COURSE CREDIT:	3-0-4	TOTAL MARKS:	35 Marks

Note: - All Questions are compulsory

Section-A [2 marks *5 = 10 marks]

- Q1. List any two benefits for using Servlet over CGI. [2]
- Q2. Write the output of the following code with reason [1+1]

```
public class A
{
    public static void main(String[] args)
    {
        while(true)
        {
            System.out.println("Hello");
            System.out.println("Hi");
        }
    }
}
```
- Q3. Differentiate between instance variable and static variable. [2]
- Q4. A java statement is written as: `ArrayList<int> list=new ArrayList<int>();` There is syntax error in the statement. Give the reason of the error and rectify it. [2]
- Q5. Describe the working of `int read()` method for reading with `FileInputStream` object. [2]

Section-B [3marks *5 = 15 marks]

- Q6. The given code is incomplete. Complete the program by writing code at indicated place to match the output.

```
class A
{
    int []arr;
    A(int a[]) { //Write your code here }
    public static void main(String []args)
    {
        int []a={1,2,3};
        A obj1=new A(a);
        for(int v:obj1.arr)
            System.out.println(v);
    }
}
```

O/P:

1
2
3

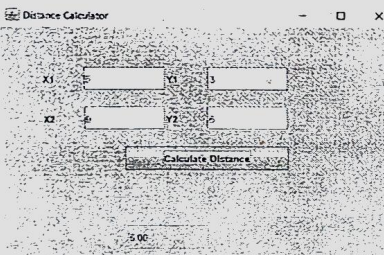
[3]
- Q7. What is thread? Explain life cycle of a thread with proper diagram. [1+2]
- Q8. Explain the steps to connect to a database using JDBC. Give an example. [2+1]
- Q9. How are packages used to resolve naming conflicts in JAVA? With an example show to add classes to packages and how to import packages in classes. [1+1+1]

Q10. The following java class has a method *midElement* which finds the mid value among the given three arguments, if all the arguments have distinct values. The program has a compile time error. Identify the cause of the error and rectify the error in the code. [1+2]

```
class Main
{
    public static double midElement(double a, double b, double c)
    {
        if(a==b || b==c || c==a)
        {
            throw new Exception("Elements are not Distinct");
        }
        double x=Math.max(Math.max(a,b),c);
        double y=Math.min(Math.min(a,b),c);
        return a+b+c-x-y;
    }
    public static void main(String args[])
    {
        System.out.println(midElement(67.5,200.0,100.7));
    }
}
```

Section-C [5 marks *2 = 10 marks]

Q11. Write a GUI program using swing to calculate distance between two points p1(x1, y1) and p2(x2, y2). The values of x1, y1, x2 & y2 are entered by the user from GUI interface. When the "Calculate Distance" button is clicked, the program should display the distance between points. Please refer the given GUI for your reference. [5]



Note: The formula to calculate the distance between two points is:

$$\text{distance} = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

Q12. Your university has a grading system with 'A' grade if cgpa ≥ 70, 'B' if 50 ≤ cgpa < 70, 'C' if cgpa < 50. The university has announced a scholarship scheme with scholarship of 20000 for 'A' grade students, scholarship of 10000 for 'B' grade student and no scholarship for 'C' grade students. A java program using switch case is given below which receives the Grade of a student as input and displays the scholarship amount. The program may not be logically correct.

```
import java.util.*;
class Main
{
    public static void main(String arg[])
    {
        Scanner sc=new Scanner(System.in);
        char grade=sc.nextLine().charAt(0);
        switch(grade)
        {
            default:
                System.out.println("Invalid Grade");
            case 'A':
                System.out.println("Scholarship= 20000");
            case 'B':
                System.out.println("Scholarship= 10000");
            case 'C':
                System.out.println("No Scholarship");
        }
    }
}
```

- What will be output if D is given as input? [1.5mark]
- What will be output if B is given as input? [1.5mark]
- Rewrite the program to work it correctly? [2mark]