Worksheet 2

Q1. Java method overloading implements the OOPS concept

A. Encapsulation B. Inheritance C. Polymorphism D. Abstraction

Ans: B

Q2.Data members and member functions of a class are private by default.

A. True B. False C. Depend on code D. None

Ans:A

Q3.Which of the following functions can be inherited from the base class?

A. Constructor B. Static C. All D. None

Ans:- D

Q4. Identify the feature, which is used to reduce the use of nested classes.

A. Binding B. Abstraction C. Inheritance D. None

Ans:-C

Q5. Which concept of Java is achieved by combining methods and attributes into a class?

A. Encapsulation B. Inheritance C. Polymorphism D. Abstraction

Ans:-A

Q6.Which of the following declarations does not compile?

A. double num1, int num2 = 0; B. int num1, num2; C. int num1, num2 = 0; D. int num1 = 0, num2 = 0;

Ans:- A

Q7.Which of these interface must contain a unique element?

A. Set B. List C. Array D. collection

Ans:-A

```
package main;
class T {
  int t = 20;
}
class Main {
```

```
   public static void main(String args[]) {
      T t1 = new T();
      System.out.println(t1.t);
   }
}
```

A. 20 B. 0 C. COMPILE ERROR

Ans B

Q9. What is the output of the below Java program?

//bingo.java file

public class Hello

{ public static void main(String[] args)

{ System.out.println("BINGO");

}

}

A. BINGO B. bingo C. 0 D. Compile Erro

Ans:-D

Q10.What will be the output of the following Java program?

class variable_scope

{

public static void main(String args[])

{

int x;

x = 5;

{

int y = 6;

System.out.print(x + " " + y);

}

```
System.out.println(x + " " + y);

}

}
```

A. Compilation Error B. Runtime Error C. 5 6 5 6 D. 5 6

Ans:-A

Q11.What will be the output of the following Java code?

```
class String_demo

{

public static void main(String args[])

{

char chars[] = {'a', 'b', 'c'};

String s = new String(chars);

System.out.println(s);

}

}
```

A. abc B. a C. b D. c

Ans:- A

Q12. What will be the output of the following Java program? final class A { int i; } class B extends A { int j; System.out.println(j + " " + i); } class inheritance { public static void main(String args[]) { B obj = new B(); obj.display(); } }

A. 2 2 B. 3 3 C. Runtime Error D. Compilation Error

Ans:-D

Q13.What is output of following program

```
public class Test

{

public int getData() //getdata()
```

```
1 {
return 0;
}
public long getData() //getdata 2
{
return 1;
}
public static void main(String[] args)
{
Test obj = new Test();
System.out.println(obj.getData());
}
}
```

A. 1 B. 0 C. Runtime Error D. Compilation Error

AnsD

Q14. What is the output of the following program?

```
public class Test
{
 static int start = 2;
final int end;
public Test(int x)
 {
 x = 4;
 end = x;
 }
```

```
 public void fly(int distance)
{
 System.out.println(end-start+" ");
 System.out.println(distance);
 }
 public static void main(String []args)
{
 new Test(10).fly(5);
 }
 }
```

A. [2 5] B. [0 0] C. [5 2] D. [0 2]

Ans:-A

Q15.What is the output of the following program?

```
 String john = "john";
String jon = new String(john);
 System.out.println((john==jon) + " "+ (john.equals(jon)));
```

A. true true B. true false C. false true D. false false

Ans:-C

Q16. Given that Student is a class, how many reference variables and objects are created by the following code?

```
Student studentName, studentId;
studentName = new Student();
 Student stud_class = new Student();
```

A. Three reference variables and two objects are created. B. Two reference variables and two objects are created. C. One reference variable and two objects are created. D. Three reference variables and three objects are created.

Ans:-A

Q17 to Q25 are simple java programs to write.

Q17. Write a java program to check even or odd number

```
import java.util.Scanner;

public class Main {

   public static void main(String[] args) {


      Scanner reader = new Scanner(System.in);


      System.out.print("Enter a number: ");

      int num = reader.nextInt();


      if(num%2 == 0){

         System.out.println(num + " is even");

      }else{

         System.out.println(num + " is odd");

      }

   }

}
```

OUTPUT:-

java -cp /tmp/7agpsJkHCQ Main

Enter a number: 7

7 is odd

Q18. Write a java program to find average of two numbers

```
import java.util.Scanner;
public class Average {
  public static void main(String[] args) {
```

```
    // create Scanner class object
    Scanner scan = new Scanner(System.in);

    // declare two numbers
    double num1 = 0;
    double num2 = 0;

    // declare sum variable
    // and initialize with 0
    double sum = 0.0;
    // declare average variable
    double avg = 0.0;

    // take two numbers
    System.out.print("Enter two numbers: ");
    num1 = scan.nextDouble();
    num2 = scan.nextDouble();

    // calculate the sum value
    sum = num1 + num2;
    // calculate the average value
    avg = sum/2;

    // display result
    System.out.println("Average: " + avg );
  }
}
```

OUTPUT:-

java -cp /tmp/iqMFozKasu Average

Enter two numbers: 67

89

Average: 78.0

Q19. Write a java program to swap two numbers

```
public class SwapNumbers {


  public static void main(String[] args) {
```

```
        float first = 1.20f, second = 2.45f;

        System.out.println("--Before swap--");
        System.out.println("First number = " + first);
        System.out.println("Second number = " + second);

        // Value of first is assigned to temporary
        float temporary = first;

        // Value of second is assigned to first
        first = second;

        // Value of temporary (which contains the initial value of first) is assigned to second
        second = temporary;

        System.out.println("--After swap--");
        System.out.println("First number = " + first);
        System.out.println("Second number = " + second);
    }
}
```

OUTPUT:-

```
java -cp /tmp/pamUmc3YeV SwapNumbers
--Before swap--First number = 1.2
Second number = 2.45
--After swap--
```

First number = 2.45

Second number = 1.2

Q20. Write a java program to check whether a number is prime or not

```
public class Main {


  public static void main(String[] args) {


    int num = 29;
    boolean flag = false;
    for (int i = 2; i <= num / 2; ++i) {
      // condition for nonprime number
      if (num % i == 0) {
        flag = true;
        break;
      }
    }


    if (!flag)
      System.out.println(num + " is a prime number.");
    else
      System.out.println(num + " is not a prime number.");
  }
}
```

OUTPUT:-

java -cp /tmp/pf0cWVvpSf Main

29 is a prime number.

Q21. Write a java program to find table of n

```
public class MultiplicationTable {


   public static void main(String[] args) {


      int num = 5;

      for(int i = 1; i <= 10; ++i)

      {

         System.out.printf("%d * %d = %d \n", num, i, num * i);

      }

   }

}
```

OUTPUT:-

java -cp /tmp/srn4jVBTFH MultiplicationTable

5* 1 = 55 * 2 = 10

5 * 3 = 15

5 * 4 = 20

5 * 5 = 25

5* 6 = 30

5 * 7 = 35

5 * 8 = 40

5 * 9 = 45

5 * 10 = 50

Q22. Write a java program to find the largest of three numbers.

```
public class Largest {


   public static void main(String[] args) {


      double n1 = -4.5, n2 = 3.9, n3 = 5.5;


      if(n1 >= n2) {
         if(n1 >= n3)
            System.out.println(n1 + " is the largest number.");
         else
            System.out.println(n3 + " is the largest number.");
      } else {
         if(n2 >= n3)
            System.out.println(n2 + " is the largest number.");
         else
            System.out.println(n3 + " is the largest number.");
      }
   }
}
```

OUTPUT:-

```
java -cp /tmp/sEO5FU6lo3 Largest
5.5 is the largest number.
```

Q23. Write a java program to calculate Simple Interest

```
import java.util.Scanner;


class Main {
  public static void main(String[] args) {

    // create an object of Scanner class
    Scanner input = new Scanner(System.in);

    // take input from users
    System.out.print("Enter the principal: ");
    double principal = input.nextDouble();

    System.out.print("Enter the rate: ");
    double rate = input.nextDouble();

    System.out.print("Enter the time: ");
    double time = input.nextDouble();

    double interest = (principal * time * rate) / 100;

    System.out.println("Principal: " + principal);
    System.out.println("Interest Rate: " + rate);
    System.out.println("Time Duration: " + time);
    System.out.println("Simple Interest: " + interest);
```

```
    input.close();
  }
}
```

Output:-

```
java -cp /tmp/xOBRthc5dm Main
Enter the principal: 1000
Enter the rate: 12
Enter the time: 12
Principal: 1000.0Interest Rate: 12.0Time Duration: 12.0Simple Interest: 1440.0
```

Q24. Write a java program to calculate Area and perimeter of Rectangle

```
/**
 * Java program to find perimeter and area of a rectangle.
 */
import java.util.Scanner;

public class Rectangle {

    public static void main(String[] args) {

        float length, width, area, perimeter;

        // Create scanner class object
        Scanner in = new Scanner(System.in);
```

```
        // Input length and width of rectangle
        System.out.print("Enter length of rectangle: ");
        length = in.nextFloat();

        System.out.print("Enter width of rectangle: ");
        width  = in.nextFloat();



        // Calculate perimeter  of rectangle
        perimeter = 2 * (length + width);

        // Calculate area of rectangle
        area = length * width;



        // Print perimeter and area of rectangle
        System.out.println("Perimeter of rectangle is " + perimeter + " units.");
        System.out.println("Area of rectangle is " + area + " sq. units.");
    }
}
```

OUTPUT:-

```
java -cp /tmp/lKsfefSBY0 Rectangle
Enter length of rectangle: 12
```

Enter width of rectangle: 12

Perimeter of rectangle is 48.0 units.

Area of rectangle is 144.0 sq. units.

Q25. Write a java program to check whether character is vowel or consonant

```
public class VowelConsonant {


   public static void main(String[] args) {


      char ch = 'z';


      switch (ch) {
         case 'a':
         case 'e':
         case 'i':
         case 'o':
         case 'u':
            System.out.println(ch + " is vowel");
            break;
         default:
            System.out.println(ch + " is consonant");
      }
   }
}
```

OUTPUT:-

java -cp /tmp/truDpd8v2W VowelConsonant

z is consonant