FULL STACK DEVELOPMENT – WORKSHEET 2

Q1 to Q7 are multiple choice questions having one correct answer only.

Q1.Java method overloading implements the OOPS concept

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

Ans. C

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

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

Ans. B

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

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

Ans. C

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

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

Ans. B

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

Q8 to Q16 you have to find output and give explanation where needed.

Q8.Predict the output?

```
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. A

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 Error

Ans. A

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 5

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

Ans. D

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. C

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. B

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. B

Q17 to Q25 are simple java programs to write.

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

Ans.
```
import java.util.Scanner;

public class EvenOddChecker {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int number = scanner.nextInt();

        if (number % 2 == 0) {
            System.out.println(number + " is an even number.");
        } else {
            System.out.println(number + " is an odd number.");
        }
    }
}
```

Output :- Enter a number: 23
23 is an odd number.

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

Ans.
```
import java.util.Scanner;

public class AverageCalculator {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter the first number: ");
        double num1 = scanner.nextDouble();

        System.out.print("Enter the second number: ");
        double num2 = scanner.nextDouble();

        double average = (num1 + num2) / 2;
```

```
        System.out.println("The average of " + num1 + " and " + num2 + " is: " + average);
    }
}
```

Output :- Enter the first number: 20
Enter the second number: 10
The average of 20.0 and 10.0 is: 15.0

Q19. Write a java program to swap two numbers

Ans.

```
import java.util.Scanner;

public class NumberSwapper {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter the first number: ");
        int num1 = scanner.nextInt();

        System.out.print("Enter the second number: ");
        int num2 = scanner.nextInt();

        System.out.println("Before swapping: num1 = " + num1 + ", num2 = " + num2);

        // Swapping logic
        int temp = num1;
        num1 = num2;
        num2 = temp;

        System.out.println("After swapping: num1 = " + num1 + ", num2 = " + num2);
    }
}
```

Output :- Enter the first number: 22

Enter the second number: 44

Before swapping: num1 = 22, num2 = 44

After swapping: num1 = 44, num2 = 22

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

Ans.

```
import java.util.Scanner;

public class PrimeChecker {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter a number: ");
        int number = scanner.nextInt();

        boolean isPrime = true;

        if (number <= 1) {
            isPrime = false;
        } else {
            for (int i = 2; i <= Math.sqrt(number); i++) {
                if (number % i == 0) {
                    isPrime = false;
                    break;
                }
            }
        }

        if (isPrime) {
            System.out.println(number + " is a prime number.");
        } else {
            System.out.println(number + " is not a prime number.");
        }
    }
}
```

Output :- Enter a number: 13
13 is a prime number.

Q21. Write a java program to find table of n
Ans. import java.util.Scanner;

```
public class TableGenerator {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter the number: ");
        int n = scanner.nextInt();

        System.out.print("Enter the range: ");
        int range = scanner.nextInt();

        System.out.println("Table of " + n + ":");

        for (int i = 1; i <= range; i++) {
            int result = n * i;
            System.out.println(n + " x " + i + " = " + result);
        }
    }
}
```

Output :- Enter the number: 10
Enter the range: 10
Table of 10:10 x 1 = 10
10 x 2 = 20
10 x 3 = 30
10 x 4 = 40
10 x 5 = 50
10 x 6 = 60

10 x 7 = 70

10 x 8 = 80

10 x 9 = 90

10 x 10 = 100

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

Ans.

```
import java.util.Scanner;

public class LargestNumberFinder {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter the first number: ");
        int num1 = scanner.nextInt();

        System.out.print("Enter the second number: ");
        int num2 = scanner.nextInt();

        System.out.print("Enter the third number: ");
        int num3 = scanner.nextInt();

        int largestNumber = num1;

        if (num2 > largestNumber) {
            largestNumber = num2;
        }

        if (num3 > largestNumber) {
            largestNumber = num3;
        }

        System.out.println("The largest number is: " + largestNumber);
    }
}
```

Output :- Enter the first number: 23
Enter the second number: 45
Enter the third number: 78
The largest number is: 78

Q23. Write a java program to calculate Simple Interest
Ans. import java.util.Scanner;

```
public class LargestNumberFinder {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter the first number: ");
        int num1 = scanner.nextInt();

        System.out.print("Enter the second number: ");
        int num2 = scanner.nextInt();

        System.out.print("Enter the third number: ");
        int num3 = scanner.nextInt();

        int largestNumber = num1;

        if (num2 > largestNumber) {
            largestNumber = num2;
        }

        if (num3 > largestNumber) {
            largestNumber = num3;
        }

        System.out.println("The largest number is: " + largestNumber);
    }
```

```
}
```

Output :- Enter the principal amount: 100000
Enter the rate of interest: 10
Enter the time period (in years): 5
Simple Interest = 50000.0

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

Ans.

```
import java.util.Scanner;

public class RectangleCalculator {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter the length of the rectangle: ");
        double length = scanner.nextDouble();

        System.out.print("Enter the width of the rectangle: ");
        double width = scanner.nextDouble();

        double area = length * width;
        double perimeter = 2 * (length + width);

        System.out.println("Area of the rectangle: " + area);
        System.out.println("Perimeter of the rectangle: " + perimeter);
    }
}
```

Output :- Enter the length of the rectangle: 20
Enter the width of the rectangle: 40
Area of the rectangle: 800.0
Perimeter of the rectangle: 120.0

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

Ans.

```
import java.util.Scanner;

public class VowelConsonantChecker {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter a character: ");
        char ch = scanner.next().charAt(0);

        if (isVowel(ch)) {
            System.out.println(ch + " is a vowel.");
        } else {
            System.out.println(ch + " is a consonant.");
        }
    }

    public static boolean isVowel(char ch) {
        ch = Character.toLowerCase(ch);

        return ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u';
    }
}
```

Output :- Enter a character: a

a is a vowel.