



Lab Paper

Submitted By:

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BS (SE) Section: B

Submitted To:

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**Department of Computer Science,
IQRA National University, Peshawar Pakistan**

Department of Computer Science

Final Term Exam Spring 2020

Subject:

Oriented Programming (Lab)

Object

BS (CS,SE)

Instructor: M.Ayub Khan

There are total **5** questions in this paper.

Note:

At the top of the answer sheet there must be the ID, Name and semester of the concerned Student.

Students must have to provide the output of their respective programs. Students have same answers or programs will be considered fail. Programs in Java or codes should be explained clearly.

As this paper is online so incase of any ambiguity my Whatsapp no. is 034499121116.

**Each question carry equal marks.
Please answer briefly.**

Q1. How to check Even and Odd numbers in java using object oriented approach?

Q2. How to add 2 complex numbers in java using object oriented approach?

Q3. How to check Leap year in java using object oriented approach?

Q4. How to check that the input from the user is the vowel or not in java using object oriented approach?

Q5. How to use power of a number in java using object oriented approach?

Answer No 1:

```
import java.util.Scanner;

public class Even_Odd {

    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:

```
Enter a number: 6
6 is even
```

```
Enter a number: 5
5 is odd
```

Answer No 2:

```
public class Complex {

    double real;
    double imag;

    public Complex(double real, double imag) {
        this.real = real;
        this.imag = imag;
    }
}
```

```

public static void main(String[] args) {
    Complex n1 = new Complex(2.3, 4.5),
        n2 = new Complex(3.4, 5.0),
        temp;

    temp = add(n1, n2);

    System.out.printf("Sum = %.1f + %.1fi", temp.real,
temp.imag);
}

public static Complex add(Complex n1, Complex n2)
{
    Complex temp = new Complex(0.0, 0.0);

    temp.real = n1.real + n2.real;
    temp.imag = n1.imag + n2.imag;

    return(temp);
}
}

```

When you run the program, the output will be:

```
Sum = 5.7 + 9.5i
```

Answer No 3:

```

public class leapyear {

    public static void main(String[] args) {

        int year = 2020;
        boolean leap = false;

        if(year % 4 == 0)

```

```

        {
            if( year % 100 == 0)
            {
                // year is divisible by 400, hence the year
is a leap year
                if ( year % 400 == 0)
                    leap = true;
                else
                    leap = false;
            }
            else
                leap = true;
        }
        else
            leap = false;

        if(leap)
            System.out.println(year + " is a leap year.");
        else
            System.out.println(year + " is not a leap
year.");
    }
}

```

OUTPUT:

```

2020 is a leap year.
2021 is not a leap year.

```

Answer NO 4:

```

                Given character is a consonant
import java.util.Scanner;

public class VowelOrConsonant {

    public static void main(String args[]) {

        System.out.println("Enter a character :");

```

```
Scanner sc = new Scanner(System.in);
char ch = sc.next().charAt(0);
if(ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch ==
'u' || ch == ' ') {
    System.out.println("Given character is an vowel");
} else {
    System.out.println("Given character is a consonant");
}
}
```

Output:

Enter a character :

a

Given character is an vowel

Enter a character :

l

Answer NO 5:

```
import java.lang.Math;
public class Power {
public static void main(String args[]) {
double x = 20;
double y = 2;
System.out.println(Math.pow(x, y));
x = 2;
y = 4;
```

```
System.out.println(Math.pow(x, y));  
x = 2;  
y = 4;  
System.out.println(Math.pow(x, y));  
}  
}
```

OUTPUT:

```
400.0  
16.0  
16.0
```