

pt. No. ....

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Name - Ritu Bachle

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Teacher's Signature : \_\_\_\_\_

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Question 1:- Introduction to Java?

Ans:-

Java is a general-purpose object-oriented programming language.

Java was developed by James Gosling at Sun Microsystems Inc. in the year 1991, later acquired by Oracle Corporation.

It is a simple programming language. Java makes writing, compiling, and debugging programming easy. It helps to create reusable code and modular programs.

Question 2:-

WAP to print "Hello World"?

Public class helloworld {

```
public static void main (String args[]) {  
    System.out.print ("Hello World");  
}
```

}

Output

Hello world

Question 3:-

Wap to perform all arithmetic operation of 2 numbers?

Public class Arithmetic operation {  
public static void main (String args[]) {

```
int a = 10;  
int b = 20;  
int add = a+b;  
int sub = a-b;  
int mult = a*b;  
int div = a/b;  
int mod = a%b;
```

```
System.out.println ("The Addition of a and b is "+ add);  
System.out.println ("The Subtraction of a and b is "+ sub);  
System.out.println ("The multiplication of a and b is "+ mult);  
System.out.println ("The Division of a and b is "+ div);  
System.out.println ("The modulus of a and b is "+ Mod);
```

{

{



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## Output

The Addition of a and b is 30

The Subtraction of a and b is -10

The Multiplication of a and b is 200

The division of a and b is 10

The Modulus of a and b is 10

Question 4:- Write a program to perform all arithmetic operation of 2 numbers taking input from user?

// program to take input from user.

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

```
public class Main {
```

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

```
        Scanner in = new Scanner (System.in);
```

```
        System.out.println ("Enter any two positive integer  
number ");
```

```
        int a = in.nextInt();
```

```
        int b = in.nextInt();
```

```
        int sum, sub, mul, mod;
```

```
        float div;
```

```
        Sum = a + b;
```

```
        Sub = a - b;
```

```
        Mul = a * b;
```

```
        Div = a / b;
```

```
        Mod = a % b;
```

```
        System.out.println ("In sum " + a + " + " + b + " = " + sum);
```

```
        System.out.println ("Difference " + a + " - " + b + " = " + sub);
```

System.out.println ("Product "+a+" \* "b+" = "+mul);

System.out.println ("Quotient "+a+" / "b+" = "+div);

System.out.println ("Modulus "+a+" % "b+" = "+mod);

{

{

## Output

Enter any two positive integer numbers:

5

8

Sum               $5 + 8 = 13$

Difference       $5 - 8 = -3$

Product           $5 * 8 = 40$

Quotient         $5 / 8 = 0.0$

Modulus          $5 \% 8 = 5$

Question 5:- Way to find the largest number of three numbers?

```
import java.util.Scanner;  
public class Biggest_Number  
{  
    public static void main (String args []) {  
        int x, y, z;  
  
        Scanner s = new Scanner (System.in);  
        System.out.print ("Enter the first number : ");  
        x = s.nextInt ();  
        System.out.print ("Enter the second number : ");  
        y = s.nextInt ();  
        System.out.print ("Enter the third number : ");  
        z = s.nextInt ();  
        if (x > y && x > z)  
        {  
            System.out.println ("largest number is : " + x);  
        }  
        else if (y > z)  
        {  
            System.out.println ("largest number is : " + y);  
        }  
        else  
        {  
        }  
    }  
}
```

System.out.println ("Largest number is : " + z);

{

}

}

Output :

Enter the first number 10

Enter the Second number 17

Enter the third number 15

Largest number is 17

Question 6 :- Wap to find the largest number of the three numbers using inbuilt function and taking input from user ?

```
import java.util.Scanner;  
public class LargestNumber {  
    public static void main (String args[]) {  
        int a, b, c, largest, temp;
```

```
    Scanner sc = new Scanner (System.in);  
    System.out.println ("Enter the first number:");  
    a = sc.nextInt ();  
    System.out.println ("Enter the second number:");  
    b = sc.nextInt ();  
    System.out.println ("Enter the third number:");  
    c = sc.nextInt ();
```

// comparing a and b and storing the largest number in a temp variable.

```
    temp = a > b ? a : b;  
    // Comparing the temp variable with c and storing the result  
    largest = c > temp ? c : temp;  
    // prints the largest number  
    System.out.println ("The largest number is: " + largest);
```

}

Question 7:- Wap to find. the. smallest number  
of the three. numbers?

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

```
        int a = 20;
```

```
        int b = 10;
```

```
        int c = 90;
```

```
        int smallest;
```

```
        if (a < b && a < c) {
```

```
            smallest = a;
```

```
}
```

```
        else if (b < c) {
```

```
            smallest = b;
```

```
}
```

```
        else,
```

```
{
```

```
            smallest = c;
```

```
}
```

```
        System.out.println ("Smallest + "is the smallest.");
```

```
}
```

```
}
```

Question 8 :- Way to find the smallest number of the three numbers using inbuilt function and taking input from user?

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

```
        Scanner input = new Scanner (System.in);  
        System.out.print ("Enter first number ");  
        int a = input.nextInt ();
```

```
        System.out.print ("Enter Second number ");  
        int b = input.nextInt ();
```

```
        System.out.print ("Enter third number ");  
        int c = input.nextInt ();
```

```
        int result = Math.min (a, b);  
        int result = Math.min (result, c);
```

```
        if (Answer == a) {  
            System.out.print ("A is smallest number ");  
        }
```

```
        else if (Answer == b) {
```

```
            System.out.print ("B is smallest ");
```

} else if (Answer == c) {

System.out.print ("c is Smallest");

}

else {

System.out.print ("A = B = C");

}

}

}



Experiment Name .....

Output

Enter first number 5

Enter second number

Enter third number 7

B is smallest

Teacher's Signature :

Question 9:- How to initialize a character and print whether it is lowercase, uppercase and special case?

import java.util.\*;

Public class uandlcase {

public static void main (String args []) {

char ch ;

Scanner input = new Scanner (System.in);

System.out.print ("Enter a character");

ch = input.next().charAt(0);

if (ch >= 'A' && ch <= 'Z') {

System.out.print ("Enter char in uppercase ");

} else if (ch >= 'a' && ch <= 'z') {

System.out.print ("Enter char in lowercase ");

} else {

System.out.print ("Enter char in Special ");

}

}



Experiment Name .....

{ (s = private) friend i  
("falling in s") triangulation }

Output.

: ("s = a - n") triangulation  
Enter a char: a

Enter char is lowercase.

Teacher's Signature :

**Question 10:-** WAP to find the roots of any quadratic equation?

```

import java.util.Scanner;
public class RootsOfQuadraticEquation {
    public static void main (String args []) {
        double secondRoot = 0, firstRoot = 0;
        Scanner sc = new Scanner (System.in);
        System.out.println ("Enter the value of a :: ");
        double a = sc.nextDouble ();
        System.out.println ("Enter the value of b :: ");
        double b = sc.nextDouble ();
        System.out.println ("Enter the value of c :: ");
        double c = sc.nextDouble ();

        double determinant = (b * b) - (4 * a * c);
        double sqrt = Math.sqrt (determinant);

        if (determinant > 0) {
            firstRoot = (-b + sqrt) / (2 * a);
            secondRoot = (-b - sqrt) / (2 * a);
            System.out.println ("Roots are :: " + firstRoot + " and "
                + secondRoot);
        } else if (determinant == 0) {
            System.out.println ("Root is :: " + (-b + sqrt) / (2 * a));
        }
    }
}
  
```



Experiment Name .....

Algebraic equations in one variable  
Solving linear equations in one variable  
Solving linear equations in one variable

3 (Output point)  $\{ \text{see below with output} \}$   
Enter the value of a :: 15

Enter the value of b :: 68

Enter the value of c :: 9

Roots are :: -0.04455558333472335 and

-4.988777774999861

Teacher's Signature :

Question 11:- Ways to conversion from decimal to binary. taking input from user?

```
import java.util.*;  
class DecimalBinaryStack  
{  
    public static void main (String [] args)  
    {  
        Scanner in = new Scanner (System.in);  
        // Create stack object  
        Stack<Integer> stack = new Stack<Integer>();  
  
        // user input  
        System.out.println ("Enter decimal number : ");  
        int num = in.nextInt ();  
        while (num != 0)  
        {  
            int d = num % 2;  
            stack.push (d);  
            num /= 2;  
        }  
        System.out.print ("\nBinary representation is : ");  
        while (! (stack.isEmpty ()) )  
        {  
            System.out.print (stack.pop ());  
        }  
        System.out.println ();  
    }  
}
```

{ }  
{ }

Output:

Enter decimal number: 999

Binary representation is: 1111100111

Question 12:- Way to conversion from octal to binary taking input from user?

```
import java.util.*;
```

```
public class octalToBinary {
```

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

```
    {
```

```
Scanner input = new Scanner (System.in);
```

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

```
int octal = Integer.parseInt (input.nextInt (), 8);
```

```
String strBinary = Integer.toBinaryString (octal);
```

```
System.out.println ("Binary value is :" + strBinary);
```

```
}
```

```
}
```

Experiment Name .....

Output:

Enter a number : 10

Binary value is : 1000

Question 13:- Way to conversion from hex to binary,  
taking input from user?

```
import java.util.Scanner;  
class Hexa_Binary  
{
```

```
    Scanner Scan;  
    int num;  
    void getVal()  
    {
```

```
        System.out.println ("HexaDecimal to  
        Binary");
```

```
        Scan = new Scanner (System.in);
```

```
        System.out.println ("Enter the number: ");  
        num = Integer.parseInt (Scan.nextLine());  
    }
```

```
    void convert()  
    {
```

```
        String binary = Integer.toBinaryString (num);
```

```
        System.out.println ("Binary value is: "+binary);  
    }
```

```
}
```

Class Mainclass

```
{
```

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

{

```
Hexa-Binary obj = new Hexa-Binary();  
obj.getVal();  
obj.Convert();
```

}

}

Output :- HexaDecimal to Binary

Enter the number: 20

Binary value is : 100000

Question 14:- Wap to conversion from binary to decimal taking input from user ?

```
package sampleprogram;  
import java.util.Scanner;
```

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

```
        Scanner BinaryInput = new Scanner (System.in);
```

```
        System.out.print ("Enter the Binary Number - ");
```

```
        String BinaryNumber = BinaryInput.nextLine ();
```

```
        System.out.println ("Decimal Number - " +
```

```
        Integer.parseInt (BinaryNumber, 2));
```

```
}
```

```
}
```

Question 15:- Wap to conversion from binary to Octal  
taking Input from user?

```
import java.util.Scanner;
class Binary-Octal
```

```
{ Scanner Scan ;
    int num ;
    void getVal ()
```

```
        System.out.println ("Binary to Octal .");
        Scan = new Scanner (System.in );
        System.out.println ("Enter the number : ");
        num = Integer.parseInt(Scan.nextLine(), 2);
    }
```

```
void convert ()
{
```

```
    String octal = Integer.toOctalString (num) ;
    System.out.println ("Octal. Value. is : "+ octal);
}
```

```
}
```

Class Main class

```
{ public static void main (String... d )
```

{

Binary-Octal obj = new Binary-Octal();

obj.getVal();

obj.convert();

}

}

Output: Binary to Octal

Enter the number: 1010

Octal value. is : 12

Question 16:- Way to conversion from binary to hex taking input from user?

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

```
class Binary_Hexa
```

```
{
```

```
Scanner Scan;
```

```
int num;
```

```
void getVal()
```

```
{
```

```
System.out.println("Binary to HexaDecimal");
```

```
Scan = new Scanner(System.in);
```

```
System.out.println("Enter the number: ");
```

```
num = Integer.parseInt(Scan.nextLine());
```

```
};
```

```
void convert()
```

```
{
```

```
String hexa = Integer.toHexString(num);
```

```
System.out.println("HexaDecimal Value is: "+hexa);
```

```
};
```

```
}
```

```
class main-class
```

```
{
```

```
public static void main (String... s)
```

```
{
```

Binary\_Flexa obj = new Binary\_Flexa();

obj.getVal();  
obj.convert();

{

}

+ : medium level

Output: Binary to HexaDecimal,

Enter the number: 13 = 1010

FlexaDecimal value is: 2 \* P

P1 = 1 \* P

P2 = P \* P

P3 = 8 \* P

P4 = E \* P

P5 = 01 \* P

Question 17:- Ways to print a table taking input from user ?

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

```
    Scanner sc = new Scanner (System.in);  
    System.out.print ("Enter number:");
```

// reading a number whose table is to be print

```
    int num = sc.nextInt();
```

// loop start execution from and execute until the condition  $i <= 10$  becomes false,

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

// print table of the entered number

```
    System.out.println (num + "*" + i + "=" + num * i);
```

```
}
```



Experiment Name .....

Output :-

Enter number : 7

$$7 * 1 = 7$$

$$7 * 2 = 14$$

$$7 * 3 = 21$$

$$7 * 4 = 28$$

$$7 * 5 = 35$$

$$7 * 6 = 42$$

$$7 * 7 = 49$$

$$7 * 8 = 56$$

$$7 * 9 = 63$$

$$7 * 10 = 70$$

Teacher's Signature

Question 18:- Way to find square root taking input from user?

```

import java.util.Scanner;
public class Main
{
    public static void main (String [] args)
    {
        Scanner sc = new Scanner (System.in);
        System.out.println ("Enter a number : ");
        int n = sc.nextInt ();
        System.out.println ("The square root of " + n + " is : "
                            "+ squareRoot (n));
    }

    public static double squareRoot (int num)
    {
        double temp;
        double sqrtroot = num / 2;
        do
        {
            temp = sqrtroot;
            sqrtroot = (temp + (num / temp)) / 2;
        }
        while ((temp - sqrtroot) != 0);
        return sqrtroot;
    }
}

```



Experiment Name .....

(*Chloris viridis*) von Wile Stolo. 1889?

Output:  $\text{vol. } \frac{1}{3} \text{ of cylinder}$

Enter a number : 95

The square root of 45 is: 6.708203932499369

Question 19:- Wap to find square root using inbuilt function taking input from user?

```
import java.util *;
```

```
public class Main {
```

```
    Public static void main (String args [])
```

```
{
```

```
        int num;
```

```
        Scanner input = new Scanner (System.in);
```

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

```
        num = input.nextInt();
```

```
        int root = Math.sqrt (num, 0.5);
```

```
        System.out.print ("root is " + root);
```

```
}
```

```
3
```



Experiment Name .....

Output:

(ii) `int a = 12; double b = 3.14;`  
`System.out.println("Root of " + a + " is " + b);`

Enter a number: 121

Root is 11.0

Teacher's Signature :

Question 20:- Wap to generating Fibonacci Series taking input from user?

```
import java.util.*;
```

```
public class main {
```

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

}

```
    Scanner input = new Scanner (System.in);
```

```
    int a=0, b=1;
```

```
    System.out.print ("Enter number ");
```

```
    int num = input.nextInt();
```

```
    System.out.println ("Series is : ");
```

```
    for (int i=1; i <= num; i++) {
```

```
        System.out.print (a + " ");
```

```
        int sum = a + b;
```

```
        a = b;
```

```
        b = sum;
```

}

}

Experiment Name .....

Ans: for example half of gold - it makes  
half gold right? without binder

{ \* like we do today

? mostly about writing

(1) give print & reverse how situation looks

{

Output:

{ more easier than

{ Enter a number : 10 print reverse

Series is : 0 1 1 2 3 5 8 13 21 24

{ (1) take string = more

{ (2.0 easier) write. Now = less. than

{ (now " is true") - true. less. more

Teacher's Signature :