```java
public class exp1 {
    public static void main(String[] args)
    {
                // Integer data types
                byte aByte = 10;
                short aShort = 1000;
                int anInt = 100000;
                long aLong = 1000000000L;

                // Floating-point data types
                float aFloat = 3.14f;
                double aDouble = 3.14159265359;

                // Character data type
                char aChar = 'A';

                // Boolean data type
                boolean aBoolean = true;

                // Output values
                System.out.println("Byte: " + aByte);
                System.out.println("Short: " + aShort);
                System.out.println("Int: " + anInt);
                System.out.println("Long: " + aLong);
                System.out.println("Float: " + aFloat);
                System.out.println("Double: " + aDouble);
                System.out.println("Char: " + aChar);
                System.out.println("Boolean: " + aBoolean);
            }
        }
```

Byte: 10

Short: 1000

Int: 100000

Long: 1000000000

Float: 3.14

Double: 3.14159265359

Char: A

Boolean: true

GANESH MOROLIYA (A-102)

Q2

```
public class exp2 {
    public static void main(String[] args) {

                boolean operand1 = true;
                boolean operand2 = false;

                // Logical AND operator (&&)
                boolean resultAND = operand1 && operand2;
                System.out.println("Operand1 && Operand2: " + resultAND);

                // Logical OR operator (||)
                boolean resultOR = operand1 || operand2;
                System.out.println("Operand1 || Operand2: " + resultOR);
            }
        }
```

Operand1 && Operand2: false

Operand1 || Operand2: true

//Q3

```
import java.util.*;
public class exp3 {
    public static void main(String[] args) {
                Scanner sc = new Scanner(System.in);
                System.out.print("Enter a number to find its factorial: ");
                int number = sc.nextInt();

                long factorial = calculateFactorial(number);

                System.out.println("Factorial of " + number + " is: " +
factorial);

            }
            public static long calculateFactorial(int n) {
                if (n < 0) {
                    throw new IllegalArgumentException("Factorial is not
defined for negative numbers");
                }
                if (n == 0 || n == 1) {
                    return 1;
                }

                long result = 1;
                for (int i = 2; i <= n; i++) {
                    result *= i;
                }
                return result;
            }
        }
```

Enter a number to find its factorial:

5

Factorial of 5 is: 120

Q4

```
public class exp4 {
    public static void main(String[] args) {
        int rows = 5;
        for (int i = 1; i <= rows; i++) {
            for (int j = 1; j <= i; j++) {
                        System.out.print(j + " ");
                    }
                    System.out.println();
                }
            }
        }
```

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

Q5

```
public class exp5 {
    public static void main(String[] args) {
        int rows = 5;
        for (int i = rows; i >= 1; i--) {
            for (int j = 1; j <= i; j++) {
                System.out.print(j + " ");
            }
            System.out.println();
        }
    }
}
```

1 2 3 4 5

1 2 3 4

1 2 3

1 2

1

Q6

```
public class exp6
{
    // Function to demonstrate printing pattern
    public static void printTriangle(int n)
    {
        // outer loop to handle number of rows
        //  n in this case
        for (int i=0; i<n; i++)
        {

            // inner loop to handle number spaces
```

```
            // values changing acc. to requirement
            for (int j=n-i; j>1; j--)
            {
                // printing spaces
                System.out.print(" ");
            }

            //  inner loop to handle number of columns
            //  values changing acc. to outer loop
            for (int j=0; j<=i; j++ )
            {
                // printing stars
                System.out.print("* ");
            }

            // ending line after each row
            System.out.println();
        }
    }

    // Driver Function
    public static void main(String args[])
    {
        int n = 5;
        printTriangle(n);
    }
}
```

```
  *
 * *
* * *
* * * *
* * * * *
```

Q7

```
public class exp7 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
                System.out.print("Enter a number to reverse its digits: ");
                int number = scanner.nextInt();
                int reversedNumber = reverseDigits(number);
                System.out.println("Reversed number: " + reversedNumber);
            }
            public static int reverseDigits(int num) {
                int reversed = 0;
                while (num != 0) {
                    int digit = num % 10;
                    reversed = reversed * 10 + digit;
                    num /= 10;
                }
                return reversed;
            }
        }
```

Enter a number to reverse its digits: 1235

Reversed number: 5321

Q8

```java
import java.util.*;

public class exp8 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter the value of n: ");
        int n = scanner.nextInt();

        double sum = 0;
        for (int i = 0; i <= n; i++) {
            sum += 1 / Math.pow(2, i);
        }

        System.out.println("Sum of the series is: " + sum);
    }
}
```

Enter the value of n: 5

Sum of the series is: 1.96875

Q9

```java
public class ex9 {
    public static void main(String[] args) {
        int i=0;
        do{
            System.out.println("hello");
            i++;
        }while (i<=9);
    }
}
```

hello

hello

hello

hello

hello

hello

hello

hello

hello

hello

GANESH MOROLIYA (A-102)

Q13

```
import java.util.*;
public class t1 {
    public static void main(String[] args) {
       int a,b,c,tem,tem2;
       Scanner sc=new Scanner(System.in);
        System.out.println("ENTER A:");
        a=sc.nextInt();
        System.out.println("ENTER B:");
        b=sc.nextInt();
        System.out.println("ENTER C:");
        c=sc.nextInt();
        tem=(a>b)&(a>c)?a:(b>c)?b:c;
        tem2=(a<b)&(a<c)?a:(b<c)?b:c;


        System.out.println("Large number"+tem);
        System.out.println("Small number is:"+tem2);

    }
}
```

ENTER A:

55

ENTER B:

65

ENTER C:

2

Large number65

Small number is:2

```
import java.util.*;
public class Q13 {
    public static void main(String[] args) {
            int a, b, c, tem, tem2;
            Scanner sc = new Scanner(System.in);

            System.out.println("ENTER A:");
            a = sc.nextInt();
            System.out.println("ENTER B:");
            b = sc.nextInt();
            System.out.println("ENTER C:");
            c = sc.nextInt();

            if (a > b && a > c) {
                tem = a;
            } else if (b > c) {
                tem = b;
            } else {
                tem = c;
            }

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

```
                tem2 = a;
            } else if (b < c) {
                tem2 = b;
            } else {
                tem2 = c;
            }

            System.out.println("Large number: " + tem);
            System.out.println("Small number: " + tem2);
        }
    }
```

ENTER A:

55

ENTER B:

65

ENTER C:

2

Large number: 65

Small number: 2

Q17

```
public class Q17 {

        public static void main(String[] args) {

            int base = 3, exponent = 4;

            long result = 1;

            while (exponent != 0) {
                result *= base;
                exponent--;
            }

            System.out.println("Answer = " + result);
        }
    }
```

Answer = 81

Q20

```
import java.util.Scanner;
public class Q21 {

        public static void main(String[] args){
            int year;
            Scanner sc = new Scanner(System.in);
            System.out.println("Enter an Year :: ");
            year = sc.nextInt();
            if (((year % 4 == 0) && (year % 100!= 0)) || (year%400 == 0))
                System.out.println("Specified year is a leap year");
            else
                System.out.println("Specified year is not a leap year");
        }
    }
```

GANESH MOROLIYA (A-102)

Enter an Year ::

2024

Specified year is a leap year

Q22

```
public class Q23 {
    public static void main(String[] args) {
        int n=2;
        int tmp;
        for(int i=1;i<=10;i++){
            tmp=2*i;
            System.out.println(tmp);
        }
    }

}
```

2

4

6

8

10

12

14

16

18

20

Q25

```
public class Q24 {
    public static void main(String[] args) {
        int num = 12345, sum = 0;
        while(num!=0){
            sum += num % 10;
            num = num / 10;
        }
        System.out.println ("Sum of digits : " + sum);
    }
}
```

Sum of digits : 15

Q26

```
public class Q25 {
    public static void main(String[] args) {
        String string = "RCOEM";
```

```
        //Stores the reverse of given string
        String reversedStr = "";

        //Iterate through the string from last and add each character to
variable reversedStr
        for(int i = string.length()-1; i >= 0; i--){
            reversedStr = reversedStr + string.charAt(i);
        }

        System.out.println("Original string: " + string);
        //Displays the reverse of given string
        System.out.println("Reverse of given string: " + reversedStr);
    }
}
```

Original string: RCOEM

Reverse of given string: MEOCR

Q27

```
public class Q27 {
    public static void main(String[] args) {
        int a=15;
        int b=35;
        int c;
        c=a;
        a=b;
        b=c;
        System.out.println("value of a:"+a);
        System.out.println("value of b:"+b);
    }
}
```

value of a:35

value of b:15

```
public class Q27 {
    public static void main(String[] args) {
        int a=15;
        int b=35;
        a=a+b;
        b=a-b;
        a=a-b;
        System.out.println("value of a:"+a);
        System.out.println("value of b:"+b);
    }
}
```

Q28

```
public class Q28 {
    public static void main(String[] args) {

                // Define an array
                int[] numbers = {1, 2, 3, 4, 5};

                // Using enhanced for loop to print elements of the array
                System.out.println("Elements of the array using enhanced
for loop:");
                for (int number : numbers) {
```

```
                    System.out.println(number);
                }

                // Using enhanced for loop with a 2D array
                int[][] matrix = {{1, 2, 3}, {4, 5, 6}, {7, 8, 9}};

                // Printing elements of the 2D array
                System.out.println("\nElements of the 2D array using
enhanced for loop:");
                for (int[] row : matrix) {
                    for (int value : row) {
                        System.out.print(value + " ");
                    }
                    System.out.println();
                }
            }
        }
```

Elements of the array using enhanced for loop:

1

2

3

4

5

Elements of the 2D array using enhanced for loop:

1 2 3

4 5 6

7 8 9

Q29

```
public class Q29 {
    public static void main(String[] args) {
        char ch;
        for(ch = 'A'; ch <= 'Z'; ch++)
            System.out.print(ch + " ");
    }
}
```

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Q30

```
import java.util.*;
public class Q30 {
    public static void main(String[] args) {

        Scanner sc= new Scanner(System.in);
        System.out.println("Enter value of a:");
        float a=sc.nextFloat();
        System.out.println("Enter value of b:");
        float b=sc.nextFloat();
```

```
        float c;
        c=a*b;
        System.out.println("Multiplication of two float num is:"+c);

    }
}
```

Enter value of a:

34.0

Enter value of b:

56.76

Multiplication of two float num is:1929.84

Q31

```
public class Q31 {
    public static void main(String[] args) {
        // Define an array
        int[] array = {1, 2, 3, 4, 5};

        // Print elements of the array
        System.out.println("Elements of the array:");
        for (int i = 0; i < array.length; i++) {
            System.out.println("Element at index " + i + ": " + array[i]);
        }
    }
}
```

Elements of the array:

Element at index 0: 1

Element at index 1: 2

Element at index 2: 3

Element at index 3: 4

Element at index 4: 5

Q32

```
public class Q32 {
    public static void main(String[] args) {
                // Source array
                int[] sourceArray = {1, 2, 3, 4, 5};

                // Destination array with the same size as the source array
                int[] destinationArray = new int[sourceArray.length];

                // Copy elements from source array to destination array
                for (int i = 0; i < sourceArray.length; i++) {
                    destinationArray[i] = sourceArray[i];
                }

                // Display the elements of the destination array
                System.out.println("Elements of the destination array:");
                for (int num : destinationArray) {
```

```
                    System.out.print(num + " ");
                }
            }
        }
```

Elements of the destination array:

1 2 3 4 5

Q33

```
public class Q33 {
    public static void main(String[] args) {
        char ch1='a';
        char ch2='b';
        int ascii1=ch1;
        int ascii2=ch2;
        System.out.println("The ASCII value of " + ch1 + " is: " + ascii1);
        System.out.println("The ASCII value of " + ch2 + " is: " + ascii2);
    }
}
```

The ASCII value of a is: 97

The ASCII value of b is: 98

Q34

```
public class Q34 {
    public static void main(String[] args) {
                // Implicit type conversion (widening conversion)
                int intValue = 100;
                double doubleValue = intValue; // Implicit conversion from
int to double
                System.out.println("After implicit conversion:");
                System.out.println("int value: " + intValue);
                System.out.println("double value: " + doubleValue);

                // Explicit type conversion (narrowing conversion)
                double doubleNumber = 123.45;
                int intNumber = (int) doubleNumber; // Explicit conversion
from double to int
                System.out.println("\nAfter explicit conversion:");
                System.out.println("double value: " + doubleNumber);
                System.out.println("int value: " + intNumber);
            }
        }
```

After implicit conversion:

int value: 100

double value: 100.0

After explicit conversion:

double value: 123.45

int value: 123

Q35

```java
import java.util.*;

public class Q35 {
    public static void main(String[] args) {
        int C;
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter value of Faranite:");
        int F=sc.nextInt();
         C=(F-32)*5/9;
        System.out.println(C);
    }
}
```

Enter value of Faranite:

500

260

Q36

```java
import java.util.Scanner;

public class Q36 {
    public static void main(String[] args) {
        Float F;
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter value of celcious:");
        float C=sc.nextInt();
        F=(9*C/5)+32;
        System.out.println(F);
    }
}
```

Enter value of celcious:

65

149.0