17 APRIL 1-D ARRAY ASSIGNMENT

Q1: Write a program to print the sum of all the elements present on even indices in the given array.
Input 1: arr[] = {3,20,4,6,9}
Output 1: 16
Input 1: arr[] = {4,3,6,7,1}
Output 1: 11

CODE:-

```
import java.util.*;
public class SumOfEvenElements {
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.print("enter the size of the array : ");
        int n=sc.nextInt();
        System.out.println();
        int arr[]=new int[n];
        for(int z=0;z<2;z++){
        System.out.println("Enter the array elements : ");
        for(int i=0;i<n;i++){
            arr[i]=sc.nextInt();
        }
        int sum=0;
        for(int j=0;j<n;j++){
            if(j%2==0){
                sum+=arr[j];
            }
        }
            System.out.print("Sum of the elements present at the even
indices : "+sum);
        System.out.println();
    }
    }
}
```

OUTPUT:-
enter the size of the array : 5
Enter the array elements :
3 20 4 6 9
Sum of the elements present at the even indices : 16
Enter the array elements :
4 3 6 7 1
Sum of the elements present at the even indices : 11

Q2: Write a program to traverse over the elements of the array using for each loop and print all even elements.
Input 1: arr[] = {34,21,54,65,43}
Output 1: 34 54
Input 1: arr[] = {4,3,6,7,1}
Output 1: 4 6

CODE-

```
import java.util.*;
public class PrintEvenElements {
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter the size of the array : ");
        int n=sc.nextInt();
        System.out.println();
        int arr[]=new int[n];
        for(int z=0;z<2;z++){
        System.out.println("enter the array elements : ");
        for(int i=0;i<n;i++){
            arr[i]=sc.nextInt();
        }
        for(int ele:arr){
            if(ele%2==0){
                System.out.print(ele+" ");
            }
        }
        System.out.println();
        }

    }
}
```

OUTPUT:-
Enter the size of the array : 5
enter the array elements :
34 21 54 65 43
34 54
enter the array elements :
4 3 6 7 1
4 6

Q3: Write a program to calculate the maximum element in the array.
Input 1: arr[] = {34,21,54,65,43}
Output 1: 65
Input 1: arr[] = {4,3,6,7,1}
Output 1: 7

CODE:-

```
import java.util.*;
public class MaxElementInArray {
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter the size of the array : ");
        int n=sc.nextInt();
        System.out.println();
        int arr[]=new int[n];
        for(int z=0;z<2;z++){
            System.out.println("Enter the array elements : ");
            for(int i=0;i<n;i++){
                arr[i]=sc.nextInt();
            }
            int max=0;
            for(int j=0;j<n;j++){
                for(int y=1;y<n;y++){
                    if(arr[y]>arr[j]){
                        max=arr[y];
                    }
                }
            }
            System.out.println("Maximum element is "+max);
            System.out.println();
        }
    }
}
```

OUTPUT:-
Enter the size of the array : 5
Enter the array elements :
34 21 54 65 43
Maximum element is 65

Enter the array elements :
4 3 6 7 1
Maximum element is 7

Q4: Write a program to find out the second largest element in a given array.
Input 1: arr[] = {34,21,54,65,43}
Output 1: 54
Input 1: arr[] = {4,3,6,7,1}
Output 1: 6

CODE:-

```
import java.util.*;
public class SecondLargestElement {
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter the size of the array : ");
        int n=sc.nextInt();
        System.out.println();
        int arr[]=new int[n];
        for(int z=0;z<2;z++){
        System.out.println("Enter the array elements : ");
        for(int i=0;i<n;i++){
            arr[i]=sc.nextInt();
        }
        int max=0;
            for(int j=0;j<n;j++){
                for(int y=1;y<n;y++){
                    if(arr[y]>arr[j]){
                        max=arr[y];
                    }
                }
            }
            int se_max=0;
        for(int u=0;u<n;u++){
            for(int h=1;h<n;h++){
                if((arr[h]>arr[u]) && arr[h]!=max){
                    se_max=arr[h];
                }
            }
            }
                  System.out.println("The second largest element is :
"+se_max);
```

```
        }
    }
}
```

OUTPUT:-

Enter the size of the array : 5
Enter the array elements :
34 21 54 65 43
The second largest element is : 54
Enter the array elements :
4 3 6 7 1
The second largest element is : 6

Q5: Given an array. Find the first peak element in the array. A peak element is an element that is greater than its just left and just right neighbour.
Input 1: arr[] = {1,3,2,6,5}
Output 1: 3
Input 2: arr[] = {4,7,3,2,6,5}
Output 1: 7

CODE:-

```
import java.util.*;
public class FirstPeakElement {
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter the size of the array  : ");
        int n=sc.nextInt();
        System.out.println();
        int arr[]=new int[n];
        for(int z=0;z<2;z++){
        System.out.println("Enter the array elements : ");
        for(int i=0;i<n;i++){
            arr[i]=sc.nextInt();
        }
        for(int j=1;j<=n;j++){
            if(arr[j]>arr[j-1] && arr[j]>arr[j+1]){
                System.out.print("First Peak element is : "+arr[j]);
                System.out.println();
                break;
            }
        }
    }
```

```
    }
}
```

OUTPUT:-

Enter the size of the array : 5

Enter the array elements :
1 3 2 6 5
First Peak element is : 3
Enter the array elements :
4 7 3 2 6
First Peak element is : 7