1. A one-dimensional array holds 100 integer numbers. **Write** a C program that determines how many of the numbers belong to following ranges:
    i. Less than 0
    ii. 0 – 100
    iii. 101 – 200
    iv. 201 – 300
    v. 301 – 400
    vi. 401 and above

2. **Write** a C programming that inputs **n** numbers from user and stores it in an array **A**. Then it calculates the squares of the numbers of the array A and store those in array **B**. Next, it calculates the cubes of the numbers stored in array **A** and stores those in array **C**. Finally, your program will print the contents of array **A, B** and **C** as shown in the sample output below.

    Sample Output:
    Input the value of n: 8
    Input the values: 2 4 3 6 5 7 8 1

Number	Square	Cube
2	4	8
4	16	64
3	9	27
6	36	216
5	25	125
7	49	343
8	64	512
1	1	1

3. **Write** a complete C program that prints the numbers shown below, with the given number of rows taken as input. For example, if the number of rows is 7, the program should produce the following output.

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
1 2 3 4 5 6
1 2 3 4 5 6 7
```

4. **Write** a C program to input the marks of 30 students in Chemistry, Mathematics and Physics (each out of 100) in a two-dimensional array. For each student, find in which subject he/she got the highest marks and display the serial number of the student along with the subject name and marks.

5. What will be the output of the following program segment?

```
int i,j,k,x=0;
for(i=0;i<5;++i)
    for(j=0;j<i;++j)
    {
        k=(i+j-1);
        if( k%2==0)
            x+=k;
        else if (k%3= =0)
```

```
            x+=k-2;
        else
            x+=k-1;
        printf("%d",x);
    }
printf("\nx= %d",x);
```

6. What will be the output of the following program segment?

```
int T[5][2], M[5] = {10,20,30,40,50}, k, j;
for(k = 0; k < 5; k++)
        for(j = 0; j < 2; j++)
        {
                if(k == j)
                        T[k][j] = 0;
                else
                        T[k][j] = k * j;
                printf("%d  ",T[k][j]);

        }
printf("\n");
for(k = 0; k < 5; k++)
        for(j = 0; j < 2; j++)
        {
                T[k][j] += M[k];
                printf("%d  ",T[k][j]);
        }
```