SET - 1

1. Create Structure to store information of students as:
    - Roll Number
    - Name
    - Date of Birth
    - Sem
    - Course
    - Batch Year

The number of students (n) for whom the data will be entered by the user will be given at runtime. After allocating the appropriate memory perform the following via function calling:

i. Write a function to input the information for number of students. While entering the date of birth of student, check the validity of date of birth (validity of day and month)

ii. Write a function to print the data of students whose roll number is given.

2. Write a program to print the following pattern where value of n is entered by the user:

```
****5
***45
**345
*2345
12345
```

SET – 2

1. Create the structure named Name with the following fields:
    - First Name
    - Middle Name
    - Last Name

and an another structure named Date_of_Birth with the following fields (as number) :

- Date
- Month
- Year

Use the above two structures in the structure named Employee with the following fields:

- Employee_id
- Name
- Date_of_Birth
- Department_Name
- Designation
- Salary

The number of employees (n) for whom the data will be entered by the user will be given at runtime. After allocating the appropriate memory perform the following via function calling:

i. Write a function to input the information for number of employees. While entering the date of birth of employee, check the validity of date of birth (validity of day and month)

ii. Write a function to print the salary by employee_id (which will be unique) or by First_Name (you may find multiple values in this case).

2. Write a program to print the following pattern, where value of n will be entered by the user:

```
####1
###12
###123
#1234
12345
```

SET - 3

1. Write a program to do multiplication of two matrices **using pointers**, do check the condition for matrix multiplication.
2. Write a program to print the following pattern, where the first alphabet value will be entered by the user:
   EDCBA
   DCBA
   CBA
   BA
   A

SET – 4

1. Write a program to define POINTER TO 2-D ARRAY, scan the values in the 2-D array using the pointer and print the 2-D array using pointer along with the average of each 1-D array within it.
2. Write a program to print the following pattern, where the first alphabet value will be entered by the user:

```
$***$
!$  $!
!  $  !
!$  $!
$***$
```

SET – 5

1. Write a program to read text where the size of the text to be entered will be specified by the user at the runtime. Delete all the semicolons the text has and finally replace all ‘,’ with a ‘.’
2. Write a program to take any integer value from the user such as 97531 and then print in the following pattern:

```
****1
***31
**531
*7531
97531
```

SET - 6

1. Write a program to define the array as of the user requirements where the size of the array is specified at runtime and then use it to sort the elements within the array using optimized bubble sort.
2. Write a program to print the pascals triangle using the concept of factorial function as follows: