

# PART-B

## Program 11: To find factorial of a number.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int n, i, fact = 1;
    clrscr();
    printf("Enter an integer: ");
    scanf("%d", &n);
    // shows error if the user enters a negative integer
    if (n < 0)
        printf("Error! Factorial of a negative number doesn't exist.");
    else
    {
        for (i = 1; i <= n; i++)
        {
            fact *= i;
        }
        printf("Factorial of %d = %d", n, fact);
    }
    getch();
}
```

## Program 12: To generate Fibonacci series.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int n1=0,n2=1,n3,i,number;
    clrscr();
    printf("Enter the number of elements:");
    scanf("%d",&number);
    printf("\n%d %d",n1,n2);//printing 0 and 1
    for(i=2;i<number;++i)//loop starts from 2 because 0 and 1 are already printed
    {
        n3=n1+n2;
        printf(" %d",n3);
        n1=n2;
        n2=n3;
    }
    getch();
}
```

### Program 13: To find sum of n natural numbers.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int num, i, sum = 0; // declare local variables
    clrscr();
    printf("Enter a positive number: ");
    scanf("%d", &num); // take any positive number
    // executes until the condition remains true.
    for (i = 0; i <= num; i++)
    {
        sum = sum + i; // at each iteration the value of i is added to the sum
        variable
    }
    // display the sum of natural number
    printf("\nSum of the first %d number is: %d", num, sum);
    getch();
}
```

### Program 14: To find length of string without using built-in function.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    char str[100], i;
    clrscr();
    printf("Enter a string: \n");
    scanf("%s", str);
    // '\0' represents end of String
    for(i=0; str[i]!='\0'; ++i);
    printf("\nLength of input string: %d", i);

    getch();
}
```

### Program 15: To demonstrate string functions.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    char string1[25], string2[25];
    int l;
    clrscr();
```

```

printf("***** performing string length *****\n");

printf("enter only one string \n");
scanf("%s",string1);
l = strlen(string1);
printf("the string length is %d\n\n",l);

printf("**** performing string concatenation ****\n");

printf("enter two strings\n");
scanf("%s%s",string1,string2);
printf("the concatenated string is %s\n\n",strcat(string1,string2));

printf("***** performing string compare *****\n");

printf("enter two strings \n");
scanf("%s%s",string1,string2);

if(strcmp(string1,string2) == 0)
printf("strings are equal\n");

else
printf("strings are not equal\n");

printf("*** performing string copy ****\n");

printf("enter the two strings\n");
scanf("%d%d",string1,string2);
printf("the first string is %s and second string is %s\n",string1,string2);

strcpy(string1,string2);
printf("the first string is %s and second string is %s\n",string1,string2);

getch();
}

```

**Program 16: To read, display & add two mxn matrices using functions.**

**Program 17: To read a string and to find the number of alphabets, digits, vowels, consonants & special characters.**

```

#include<stdio.h>
#include<conio.h>
void main()
{
char str[150];

```

```

int i, vowels, consonants, digits, spaces, symbols;
vowels = consonants = digits = spaces = symbols = 0;
gets(str);
clrscr();
for(i=0; str[i]!='\0'; ++i)
{
if(str[i]=='a' || str[i]=='e' || str[i]=='i' ||
str[i]=='o' || str[i]=='u' || str[i]=='A' ||
str[i]=='E' || str[i]=='I' || str[i]=='O' ||
str[i]=='U')
{
++vowels;
}
else if((str[i]>='a' && str[i]<='z') || (str[i]>='A' && str[i]<='Z'))
{
++consonants;
}
else if(str[i]>='0' && str[i]<='9')
{
++digits;
}
else if (str[i]==' ')
{
++spaces;
}
else
{
++symbols;
}
}
printf("Vowels: %d",vowels);
printf("\nConsonants: %d",consonants);
printf("\nDigits: %d",digits);
printf("\nWhite spaces: %d", spaces);
printf("\nSymbols: %d", symbols);
getch();
}

```

### Program 18: Two swap two numbers using pointers.

```

#include <stdio.h>
#include<conio.h>
void main()
{
    int x, y, *a, *b, temp;
    clrscr();

    printf("Enter the value of x and y\n");
    scanf("%d%d", &x, &y);
}

```

```

printf("Before Swapping\nx = %d\ny = %d\n", x, y);

a = &x;
b = &y;

temp = *b;
*b = *a;
*a = temp;

printf("After Swapping\nx = %d\ny = %d\n", x, y);

getch();
}

```

**Program 19: To demonstrate student structure to read & display records of n students.**

```

#include <stdio.h>
#include <conio.h>
struct student
{
    char name[50];
    int roll;
    float marks;
};
int main()
{
    struct student s[3];
    int i;
    clrscr();
    printf("Enter information of students:\n");
    for(i=0;i<3;++i)
    {
        s[i].roll=i+1;
        printf("\nFor roll number %d\n",s[i].roll);
        printf("Enter name: ");
        scanf("%s",s[i].name);
        printf("Enter marks: ");
        scanf("%f",&s[i].marks);
        printf("\n");
    }
    printf("Displaying information of students:\n\n");
    for(i=0;i<3;++i)
    {
        printf("\nInformation for roll number %d:\n",i+1);
        printf("Name: ");
        puts(s[i].name);
        printf("Marks: %.1f",s[i].marks);
    }
}

```

```
    return 0;
}
```

**Program 20: To insert 5 elements into an array & print the elements of the array.**

```
#include <stdio.h>
#include <conio.h>

void main()
{
    int a[1000], i, n;
    clrscr();

    printf("Enter size of array: ");
    scanf("%d", &n);

    printf("Enter %d elements in the array : ", n);
    for(i=0; i<n; i++)
    {
        scanf("%d", &a[i]);
    }

    printf("\nElements in array are: ");
    for(i=0; i<n; i++)
    {
        printf("%d  ", a[i]);
    }

    getch();
}
```

