Slip 1

Q.1) A i. Write a C Program to Calculate area and Perimeter of rectangle.

```
#include<stdio.h>
int main()
{
   int length, breadth, area,perimeter;
  printf("\nEnter the Length of Rectangle : ");
   scanf("%d", &length);
   printf("\nEnter the Breadth of Rectangle : ");
   scanf("%d", &breadth);
   area = length * breadth;
     perimeter=2*(length+breadth);
    printf("\nArea of Rectangle : %d", area);
   printf("\nPerimeter of Rectangle : %d", perimeter);
   return (0);
}
```

Output -

```
Enter the Length of Rectangle : 10

Enter the Breadth of Rectangle : 4

Area of Rectangle : 40
Perimeter of Rectangle : 28
```

Slip 1

Q.1) A ii. Write a 'C' Program to calculate the sum of factors of a number.

```
#include<stdio.h>
void main( )
{
int no, sum=0, x;
printf("Enter the required number :");
scanf("%d", &no);
for( x=1; x<=no; x++) {
if(no%x==0) sum=sum+x;
}
printf("\nSum of the factors of %d is: %d", no, sum);
}
```

Output:-

Enter the required number: 10

Sum of the factors of 10 is: 18.

ie., 1+2+5+10 =18

Slip 1

Q.1) A Write a 'C' Program to check if a matrix is upper triangular

```
#include<stdio.h>
int main()
{
  int i, j, rows, columns, a[10][10];
  printf("\n Please Enter Number of rows and columns  :  ");
  scanf("%d %d", &i, &j);
  printf("\n Please Enter the Matrix Elements \n");
  for(rows = 0; rows < i; rows++)
          {
                  for(columns = 0;columns < j;columns++)
          {
                  scanf("%d", &a[rows][columns]);
          }
          }
  for(rows = 0; rows < i; rows++)
          {
                  printf("\n");
                  for(columns = 0; columns < j; columns++)
          {
                  if(columns >= rows)
                          printf("%d ", a[rows][columns]);
                  else
                          printf("0  ");
                  }
          }
  return 0;
}
```

OUTPUT:

```
 Please Enter Number of rows and columns  :  3  3
 Please Enter the Matrix Elements
1  2 3 4 5 6 7 8 9

1   2  3
0   5  6
0  0   9
```

Slip-2

Q.1) A i. Write a C Program to accept a character and check if it is uppercase or lowercase.

```
#include <stdio.h>
int main()
{
    char ch;

    printf("Enter any character: ");
    scanf("%c", &ch);

    if(ch >= 'A' && ch <= 'Z')
    {
        printf("'%c' is uppercase character.", ch);
    }
    else if(ch >= 'a' && ch <= 'z')
    {
        printf("'%c' is lowercase character.", ch);
    }
    else
    {
        printf("'%c' is not an character.", ch);
    }

    return 0;
}
```

OUTPUT:

```
Enter any character: a
'a' is lowercase alphabet.

Enter any character: A
'A' is uppercase alphabet.
```

Slip-2
Q.1) A ii. Write a ‘C’ Program to display n terms of the Fibonacci series.

```
#include <stdio.h>
int main() {
    int i, n, t1 = 0, t2 = 1, nextTerm;
    printf("Enter the number of terms: ");
    scanf("%d", &n);
    printf("Fibonacci Series: ");

    for (i = 1; i <= n; ++i) {
        printf("%d, ", t1);
        nextTerm = t1 + t2;
        t1 = t2;
        t2 = nextTerm;
    }

    return 0;
}
```

OUTPUT:

```
Enter the number of terms: 8
Fibonacci Series: 0, 1, 1, 2, 3, 5, 8, 13,
```

Slip-2

Q.1) A Write 'C' Program to find the maximum number from an array of n integers.

```
#include <stdio.h>
int main()
{

	int size, i, largest;

	printf("\n Enter the size of the array: ");
	scanf("%d", &size);
	int array[size];

	printf("\n Enter %d elements of  the array: \n", size);

	for (i = 0; i < size; i++)
	{
	   scanf("%d", &array[i]);
	}

	largest = array[0];

	for (i = 1; i < size; i++)
	{
	   if (largest < array[i])
	   largest = array[i];
	}

	printf("\n largest element present in the given array is : %d", largest);

	return 0;

}
```

OUTPUT:

```
Enter the size of the array: 5
Enter 5 elements of  the array:
12
56
34
78
100
largest element present in the given array is: 100
```

Slip-3

Q.1) A i. Write a ‘C’ Program to accept two integers from the user and interchange them. Display the interchanged numbers.

```
#include<stdio.h>
int main()
{
   int x, y, temp;

   printf("Enter the value of x and y\n");
   scanf("%d%d", &x, &y);
   printf("Before Interchange\nx = %d\ny = %d\n",x,y);
   temp = x;
   x    = y;
   y    = temp;

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

   return 0;
}
```

OUTPUT:-

```
Enter the value of x and y
6
9
Before Interchange
x = 6
y = 9
After Interchange
x = 9
y = 6
```

Slip-3

Q.1) A ii. Write a 'C' Program to accept a single digit and display it in words. For example, Input=9 Output=Nine

```
#include<conio.h>
void main()
{
  int ch;
  printf("Enter Digit: ");
  scanf("%d",&ch);
  switch(ch)
  {
case 0:
     printf("Zero\n");
     break;
case 1:
     printf("one\n");
     break;
case 2:
     printf("Two\n");
     break;
case 3:
     printf("Three\n");
     break;
case 4:
     printf("Four\n");
     break;
case 5:
     printf("Five\n");
     break;
case 6:
     printf("Six\n");
     break;
case 7:
     printf("Seven\n");
     break;
case 8:
     printf("Eight\n");
     break;
case 9:
     printf("Nine\n");
     break;
default:
     printf("invalid digit\nPlease try again ....\n");
     break;
  }
}
```

OUTPUT:

```
Enter Digit: 9
Nine
```

Slip-3

Q.1) A Write a 'C' Program to add two matrices of order m X n.

```
#include<stdio.h>
int main()
{
        int a[5][5],b[5][5],c[5][5],i,j,m,n;
        printf("How many rows and columns?");
        scanf("%d%d",&m,&n);
        printf("\nEnter first matrix:\n");
        for(i=0;i<m;++i)
                for(j=0;j<n;++j)
                        scanf("%d",&a[i][j]);
        printf("\nEnter second matrix:\n");
        for(i=0;i<m;++i)
                for(j=0;j<n;++j)
                        scanf("%d",&b[i][j]);
        printf("\nMatrix after addition:\n");
        for(i=0;i<m;++i)
        {
                for(j=0;j<n;++j)
                {
                        c[i][j]=a[i][j]+b[i][j];
                        printf("%d ",c[i][j]);
                }
                printf("\n");   }
        return 0;
}
```

Output

```
How many rows and columns?  3  3
Enter first matrix:
2 6 9
3 2 0
2 4 1
Enter second matrix:
3 4 1
6 7 9
11 3 5
Matrix after addition:
5 10 10
9 9 9
13 7
```

Slip-4

Q.1) A i. Write a 'C' Program to accept three dimensions length (l),breadth(b) and height(h) of a cuboid and print surface area (surface area=2(lb+lh+bh).

```
#include <stdio.h>
int main()
{
  float length, breadth, height;
  float SA;
  printf("\nPlease Enter Length, breadth and Height of a Cuboid\n");
  scanf("%f %f %f",&length, & breadth, &height);

  SA = 2 * (length * breadth + length * height + breadth * height);

  printf("\n The Surface Area of a Cuboid = %.2f\n",SA);

  return 0;
}
```

OUTPUT:

```
Please Enter Length, breadth and Height of a Cuboid
9
6
5

 The Surface Area of a Cuboid = 258.00
```

Slip-4

Q.1) A ii. Write a 'C' Program to accept an array of n float values and display them in the reverse order.

```
#include <stdio.h>
int main()
{
    int arr[] = {1, 2, 3, 4, 5},i;
    int length = sizeof(arr)/sizeof(arr[0]);
    printf("Original array: \n");
    for (int i = 0; i < length; i++) {
        printf("%d ", arr[i]);
    }
    printf("\n");
    printf("Array in reverse order: \n");
    for (int i = length-1; i >= 0; i--) {
        printf("%d ", arr[i]);
    }
    return 0;
}
```

OUTPUT:-

```
Original array:
1 2 3 4 5
Array in reverse order:
5 4 3 2 1
```

Slip-4

Q.1) A Write a menu driven program to perform the following operations on an integer. Write separate functions.

1. Check if is even or odd

2. Check if it is prime

3. Exit

```
#include<stdio.h>
#include<conio.h>
int main()
{
   int c=0, num, res, n, flag=0, i;
   while(c!=4)
   {
      printf("\n1.Check if it is even or odd \n2.Prime or not \n3.Exit\n");
      printf("\nEnter your choice:");
      scanf("%d", &c);
      switch(c)
      {
         case 1:
            printf("Enter an integer: ");
            scanf("%d", &num);
            n=num;

            if(num%2==0)
               printf("\n%d is Even Number.\n\n",n);
            else
               printf("\n%d is Odd Number.\n\n",n);
            break;
         case 2:
            printf("Enter an integer: ");
            scanf("%d", &num);
            n=num;
            for(i=2;i<=n/2;i++)
            {
               if(num%i==0)
               {
                  flag=1;
                  break;
               }
            }
            if(num==1)
               printf("\n1 is neither prime nor composite");
            else
            {
                  if(flag==0)
                     printf("\n%d is Prime Number.\n\n", n);
```

```
                else
                    printf("\n%d is not a Prime Number.\n\n", n);
            }
            break;
        case 3:
            printf("\nExit");
            break;
    }
  }
}
```

OUTPUT:-

1.Check if it is even or odd

2.Prime or not

3.Exit

Enter your choice:1

Enter an integer: 2

2 is Even Number.

1.Check if it is even or odd

2.Prime or not

3.Exit

Enter your choice:2

Enter an integer: 3

3 is Prime Number.

1.Check if it is even or odd

2.Prime or not

3.Exit

Enter your choice:3

Exit

SLIP:-5

Q 1) A i. Write a 'C' program to check whether the given year is leap year or not.

```
#include <stdio.h>
int main()
{
    int y;
    printf("Enter year: ");
    scanf("%d",&y);
    if(y % 4 == 0)
    {
        if( y % 100 == 0)
        {
            if ( y % 400 == 0)
                printf("%d is a Leap Year", y);
            else
                printf("%d is not a Leap Year", y);
        }
        else
            printf("%d is a Leap Year", y );
    }
    else
        printf("%d is not a Leap Year", y);

    return 0;
}
```

OUTPUT:-

```
Enter year: 1994
1994 is not a Leap Year

Enter year: 1996
1996 is a Leap Year
```

SLIP:-5

Q 1) A ii. Write a 'C' program to display all numbers between two given numbers.

```
#include<stdio.h>
int main()
{
    int min, max;

    printf("Enter 2 positive numbers\n");
    scanf("%d%d", &min, &max);

    printf("Natural numbers between %d and %d are:\n", min, max);
    while(min <= max)
    {
        printf("%d  ", min);
        min++;
    }

    printf("\n");

    return 0;
}
```

OUTPUT:-

```
Enter 2 positive numbers
10
20
Natural numbers between 10 and 20 are:
10  11  12  13  14  15  16  17  18  19  20
```

SLIP-5

Q 1) A Write ‘C’ program to subtract two matrices of order mXn

```
#include <stdio.h>
#define SIZE 3
int main()
{
   int A[SIZE][SIZE];
   int B[SIZE][SIZE];
   int C[SIZE][SIZE];
   int row, col;
   printf("Enter elements in matrix A of size 3x3: \n");
   for(row=0; row<SIZE; row++)
   {
      for(col=0; col<SIZE; col++)
      {
         scanf("%d", &A[row][col]);
      }
   }
   printf("\nEnter elements in matrix B of size 3x3: \n");
   for(row=0; row<SIZE; row++)
   {
      for(col=0; col<SIZE; col++)
      {
         scanf("%d", &B[row][col]);
      }
   }
   for(row=0; row<SIZE; row++)
   {
      for(col=0; col<SIZE; col++)
      {
         C[row][col] = A[row][col] - B[row][col];
      }
   }
   printf("\nDifference of two matrices A-B = \n");
   for(row=0; row<SIZE; row++)
   {
      for(col=0; col<SIZE; col++)
      {
         printf("%d ", C[row][col]);
      }
      printf("\n");
   }
   return 0;
}
```

OUTPUT:

```
Enter elements in matrix A of size 3x3:
1
2
3
4
5
6
7
8
9
Enter elements in matrix B of size 3x3:
9
8
7
6
5
4
3
2
1
Difference of two matrices A-B =
-8  -6  -4
-2   0   2
 4   6   8
```

SLIP:-6
Q 1) A i. Write a ‘C’ program to find maximum of two numbers.

```
#include <stdio.h>

int main()
{
   int num1, num2;

   printf("Enter two numbers: ");
   scanf("%d%d", &num1, &num2);

   if(num1 > num2)
   {
      printf("%d is maximum", num1);
   }

   if(num2 > num1)
   {
      printf("%d is maximum", num2);
   }

   if(num1 == num2)
   {
      printf("Both are equal");
   }

   return 0;
}
```

Output:

```
Enter two numbers: 10
12
12 is maximum
```

SLIP:-6

Q 1) A ii. Write a recursive function in ‘C’ to calculate factorial of a number. Use this function in main.

```
#include<stdio.h>
int find_factorial(int);
int main()
{
   int num, fact;
   printf("\nEnter any integer number:");
   scanf("%d",&num);
   fact =find_factorial(num);
   printf("\nfactorial of %d is: %d",num, fact);
   return 0;
}
int find_factorial(int n)
{
   if(n==0)
      return(1);
   return(n*find_factorial(n-1));
}
```

OUTPUT:-

```
Enter any integer number: 4
factorial of 4 is: 24
```

SLIP:-6

Q 1) A Write a 'C' program with menu to perform the following operations on a character.

1. Check uppercase or lowercase
2. Display its ASCII value
3. Display its next and previous character
4. Exit

```
#include<stdio.h>
#include<ctype.h>
int main()
{
    int ch;
    char c;
    printf("\n Enter any character : ");
    scanf("%c",&c);
    printf("\n Menu : \n1. Check uppercase or lowercase");
    printf("\n 2. Display its ASCII value");
    printf("\n 3. Display its next and previous character  \n4. Exit");
    printf("n Enter your choice (1-4)");
    scanf("%d",&ch);
    switch(ch)
   {
      case 1: if(isupper(c))
                    printf("Uppercase character");
               else if(islower(c))
                    printf("Lowercase character");
              else
                    printf("Neither lowercase nor uppercase");
                      break;
     case 2:printf("\n ASCII value of characher %c is %d",c,c);
              break;
     case 3:printf("\n Previous character of %c is %c",c,c-1);
               printf("\n Next character %c is %c",c,c+1);
              break;
     case 4: exit(0);
              break;
     default : printf("\n Invalid input…");
   }
   return 0;
}
```

OUTPUT:-

```
 Enter any character : A
 Menu :
1. Check uppercase or lowercase
 2. Display its ASCII value
 3. Display its next and previous character
4. Exitn Enter your choice (1-4)1

Uppercase character


 Enter any character : A
 Menu :
1. Check uppercase or lowercase
 2. Display its ASCII value
 3. Display its next and previous character
4. Exitn Enter your choice (1-4)2
 ASCII value of characher A is 65

 Enter any character : A
 Menu :
1. Check uppercase or lowercase
 2. Display its ASCII value
 3. Display its next and previous character
4. Exitn Enter your choice (1-4)3

 Previous character of A is @
 Next character A is B
```

SLIP:-7

Q.1) A i. Write a C Program to Calculate area and circumference of a circle.

```
#include<stdio.h>
int main()
 {
   int rad;
   float PI = 3.14, area, ci;

   printf("\nEnter radius of circle: ");
   scanf("%d", &rad);

   area = PI * rad * rad;
   printf("\nArea of circle : %f ", area);

   ci = 2 * PI * rad;
   printf("\nCircumference : %f ", ci);

   return (0);
}
```

OUTPUT:

```
Enter radius of a circle : 1
Area of circle : 3.14
Circumference  : 6.28
```

SLIP:-7

Q.1) A ii. Write a 'C' program to accept a character and check if it is alphabet,digit or special symbol. If it is an alphabet, check if it is uppercase or lowercase.

```
#include <stdio.h>
int main()
{
   char ch;
   printf("Enter any character: ");
   scanf("%c", &ch);
   if((ch >= 97 && ch <= 122) || (ch >= 65 && ch <= 90))
   {
      printf("'%c' is alphabet.", ch);
       if(isupper(ch))
                  printf("Uppercase character");
              else if(islower(ch))
                  printf("Lowercase character");
             else
                  printf("Neither lowercase nor uppercase");
   }
   else if(ch >= 48 && ch <= 57)
   {
      printf("'%c' is digit.", ch);
   }
   else
   {
      printf("'%c' is special character.", ch);
   }
   return 0;
}
```

OUTPUT:-

```
Enter any character: A
'A' is alphabet.Uppercase character
Enter any character: a
'a' is alphabet.Lowercase character
Enter any character: 9
'9' is digit.
Enter any character: #
'#' is special character.
```

SLIP:-7

Q.1) A Write a 'C' program to read a matrix and calculate the sum of its diagonal elements.

```
#include<stdio.h>
int main()
{
	int i,j,n,d1=0,d2=0,a[5][5];
	printf("Enter size of square matrix:");
	scanf("%d",&n);
	printf("Enter Elements of matrix:\n");

	for(i=0;i<n;++i)
		for(j=0;j<n;++j)
		{
			scanf("%d",&a[i][j]);
			if(i==j)
				d1+=a[i][j];
			if((i+j)==(n-1))
				d2+=a[i][j];
		}

	printf("\nFirst Diagonal Sum=%d",d1);
	printf("\nSecond Diagonal Sum=%d",d2);

	return 0;
}
```

Output:-

```
Enter size of square matrix:4
Enter Elements of matrix:
1 2 3 4
5 6 7 8
9 10 11 12
10 7 6 8
First Diagonal Sum=26
Second Diagonal Sum=31
```

SLIP:-8

Q 1) A i. Write a ‘C’ program to accept an integer and check if it is divisible by 3 and 5.

```
#include <stdio.h>
int main()
{
   int num;
   printf("Enter any number: ");
   scanf("%d", &num);

   if((num % 3 == 0) && (num % 5 == 0))
   {
      printf("Number is divisible by 3 and 5");
   }
   else
   {
      printf("Number is not divisible by 3 and 5");
   }

   return 0;
}
```

OUTPUT:-

```
Enter any number: 15
Number is divisible by 3 and 5

Enter any number: 20
Number is not divisible by 3 and 5
```

SLIP:-8

Q 1) A ii. Write a function in ‘C’ to calculate sum of digits of an integer. Use this function in main.

```
#include <stdio.h>
void main()
{
   long num, temp, digit, sum = 0;
   printf("Enter the number \n");
   scanf("%ld", &num);
   temp = num;
   while (num > 0)
   {
      digit = num % 10;
      sum  = sum + digit;
      num /= 10;
   }
   printf("Given number = %ld\n", temp);
   printf("Sum of the digits %ld = %ld\n", temp, sum);
}
```

OUTPUT:-

```
Enter the number
345
Given number = 345
Sum of the digits 345 = 12.
```

SLIP:-8

Q 1) A Write a 'C' Program to accept n integers in an array and search for a specific number.

```
#include <stdio.h>
int main()
{
   int a[10000],i,n,key;
   printf("Enter size of the  array : ");
   scanf("%d", &n);
   printf("Enter elements in array : ");
   for(i=0; i<n; i++)
   {
      scanf("%d",&a[i]);
   }
    printf("Enter the key : ");
   scanf("%d", &key);
   for(i=0; i<n; i++)
   {
      if(a[i]==key)
      {
printf("element found ");
          return 0;
      }
   }
printf("element  not  found");
}
```

OUTPUT:-

```
Enter size of the  array : 4
Enter elements in array : 1
2
3
4
Enter the key : 4
element found
```

SLIP:-9

Q 1) A i. write a ‘C’ program to interchange two numbers and display the interchanged numbers.

```
#include <stdio.h>
int main()
{
int var1, var2, temp;
printf("Enter two integer numbers");
scanf("%d%d", &var1, &var2);
printf("\nBefore Interchnage   %d\n%d", var1, var2);
temp = var1;
var1 = var2;
var2 = temp;
printf("\nAfter Interchanged   %d\n%d", var1, var2);
return 0;
}
```

OUTPUT:-

```
Enter two integer numbers3
2

Before Interchnage  3
2
After Interchanged  2
3
```

SLIP:-9

Q 1) A ii. Write a function in ‘C’ to reverse an interger. Use this in main.

```
#include<stdio.h>
int findReverse(int n)
{
   int sum=0;
   while (n!=0)
   {
     sum = sum*10 + n%10;
     n /= 10;
   }
   return sum;
}

int main()
{
   int number, reverse;

   printf("Enter a positive interger: ");
   scanf("%d", &number);

   reverse = findReverse(number);

   printf("The reverse of %d is: %d", number, reverse);

   return 0;
}
```

OUTPUT:-

```
Enter a positive integer: 12345
The reverse of 12345 is: 54321
```

SLIP:-9

Q 1) A Write a ‘C’ program to accept n integers in an array and count the frequency of each element of an array.

```
#include <stdio.h>
int main()
{
   int arr[100], freq[100];
   int size, i, j, count;
   printf("Enter size of array: ");
   scanf("%d", &size);
   printf("Enter elements in array: ");
   for(i=0; i<size; i++)
   {
      scanf("%d", &arr[i]);
      freq[i] = -1;
   }
   for(i=0; i<size; i++)
   {
      count = 1;
      for(j=i+1; j<size; j++)
      {
         if(arr[i]==arr[j])
         {
            count++;
            freq[j] = 0;
         }
      }
      if(freq[i] != 0)
      {
         freq[i] = count;
      }
   }
   printf("\nFrequency of all elements of array : \n");
   for(i=0; i<size; i++)
   {
      if(freq[i] != 0)
      {
         printf("%d occurs %d times\n", arr[i], freq[i]);
      }
   }
   return 0;
}
```

OUTPUT:

```
Enter size of array: 6
Enter elements in array: 1
2
3
1
2
3
Frequency of all elements of array :
1 occurs 2 times
2 occurs 2 times
3 occurs 2 times
```

SLIP:-10

Q 1) A i. Write C Program to check whether given number is even or odd

```
#include <stdio.h>
        int main()
        {
           int n;

           printf("Enter an integer\n");
           scanf("%d", &n);

           if (n%2 == 0)
              printf("Even\n");
           else
              printf("Odd\n");

           return 0;
        }
```

Output:

```
Enter an integer
8
Even
```

SLIP:-10

Q 1) A ii. Write a ‘c’ Program to accept in integers in an array and display the array in reverse order.

```
#include <stdio.h>
#define MAX_SIZE 100
int main()
{
   int arr[MAX_SIZE];
   int size, i, arrIndex, revIndex;
   int temp;
   printf("Enter size of the array: ");
   scanf("%d", &size);
   printf("Enter elements in array: ");
   for(i=0; i<size; i++)
   {
      scanf("%d", &arr[i]);
   }
   revIndex = 0;
   arrIndex = size - 1;
   while(revIndex < arrIndex)
   {
      temp = arr[revIndex];
      arr[revIndex] = arr[arrIndex];
      arr[arrIndex] = temp;
      revIndex++;
      arrIndex--;
   }
   printf("\nReversed array : ");
   for(i=0; i<size; i++)
   {
      printf("%d\t", arr[i]);
   }
   return 0;
}
```

OUTPUT:-

```
Enter size of the array: 5
Enter elements in array: 10 5 16 35 500

Reversed array : 500      35      16      5      10
```

SLIP:-10

Q 1) A Write a C Program by using function to check if a number is prime and use this function to display all prime numbers between 100 and 500.

```
#include <stdio.h>
int checkPrimeNumber(int n);
int main()
{
   int n1, n2, i, flag;
   printf("Enter two positive integers: ");
   scanf("%d %d", &n1, &n2);
   printf("Prime numbers between %d and %d are: ", n1, n2);
   for(i=n1+1; i<n2; ++i)
   {
      flag = checkPrimeNumber(i);
      if(flag == 1)
         printf("%d ",i);
   }  return 0;    }
int checkPrimeNumber(int n)
{
   int j, flag = 1;
   for(j=2; j <= n/2; ++j)
   {
      if (n%j == 0)
      {
         flag =0;
         break;
      }
   }
   return flag;
}
```

Output:

Enter two positive integers: 100
500
Prime numbers between 100 and 500 are: 101, 103, 107, 109, 113, 127, 131, 137, 139, 149, 151, 157, 163, 167, 173, 179, 181, 191, 193, 197, 199, 211, 223, 227, 229, 233, 239, 241, 251, 257, 263, 269, 271, 277, 281, 283, 293, 307, 311, 313, 317, 331, 337, 347, 349, 353, 359, 367, 373, 379, 383, 389, 397, 401, 409, 419, 421, 431, 433, 439, 443, 449, 457, 461, 463, 467, 479, 487, 491, 499

SLIP:-11.

Q 1) A i. Write C Program to check whether given year is leap year or not.

```
#include<stdio.h>
int main()
{
int year;
printf("Enter Year:");
scanf("%d",&year);
if(((year%4==0)&&(year%100!=0))||(year%400==0))
{
printf("LEAP YEAR");
}
else
{
printf("NOT LEAP YEAR");
}
return 0;
}
```

OUTPUT:

```
Enter Year:2004
LEAP YEAR
```

SLIP:-11.

Q 1) A ii. Write a ‘C’ program to accept an integer and display its sum of digits.

```
#include <stdio.h>
void main()
{
   long num, temp, digit, sum = 0;
   printf("Enter the number \n");
   scanf("%ld", &num);
   temp = num;
   while (num > 0)
   {
      digit = num % 10;
      sum  = sum + digit;
      num /= 10;
   }
   printf("Given number = %ld\n", temp);
   printf("Sum of the digits %ld = %ld\n", temp, sum);
}
```

OUTPUT:-

```
Enter the number
300
Given number = 300
Sum of the digits 300 = 3


Enter the number
16789
Given number = 16789
Sum of the digits 16789 = 31
```

SLIP:-11.

Q 1) A Write a 'C' program to accept a matrix of size mxn and display transpose of a given matrix.

```
#include <stdio.h>
        int main()
        {
            int a[10][10], transpose[10][10], r, c, i, j;
            printf("Enter rows and columns of matrix: ");
            scanf("%d %d", &r, &c);
            printf("\nEnter elements of matrix:\n");
            for(i=0; i<r; ++i)
                for(j=0; j<c; ++j)
                {
                    printf("Enter element a%d%d: ",i+1, j+1);
                    scanf("%d", &a[i][j]);
                }
            printf("\nEntered Matrix: \n");
            for(i=0; i<r; ++i)
                for(j=0; j<c; ++j)
                {
                    printf("%d  ", a[i][j]);
                    if (j == c-1)
                        printf("\n\n");
                }
            for(i=0; i<r; ++i)
                for(j=0; j<c; ++j)
                {
                    transpose[j][i] = a[i][j]
 }
            printf("\nTranspose of Matrix:\n");
            for(i=0; i<c; ++i)
                for(j=0; j<r; ++j)
                {
                    printf("%d  ",transpose[i][j]);
                    if(j==r-1)
                        printf("\n\n");
                }
            return 0;
        }
```

Output

```
Enter rows and columns of matrix: 2
3
Enter element of matrix:
Enter element a11: 2
Enter element a12: 3
Enter element a13: 4
Enter element a21: 5
Enter element a22: 6
Enter element a23: 4

Entered Matrix:
2  3  4
5  6  4
Transpose of Matrix:
2  5
3  6
4  4
```

SLIP:-12.

Q 1) A i. Write a ‘C’ program to read the age of a candidate and determine whether the candidate is eligible for casting his/her own vote.

```
#include <stdio.h>
void main()
{
  int vote_age;

  printf("Input the age of the candidate : ");
  scanf("%d",&vote_age);
  if (vote_age<18)
     {
       printf("Sorry, You are not eligible to caste your vote.\n");
       printf("You would be able to caste your vote after %d year.\n",18-vote_age);
     }
  else
     printf("Congratulation! You are eligible for casting your vote.\n");
}
```

OUTPUT:-

```
Input the age of the candidate : 21
Congratulation! You are eligible for casting your vote.
```

SLIP:-12.

Q 1) A ii. Write a ‘C’ program to check if a number is perfect(number=sum of its factors).

```
#include <stdio.h>
int main()
{
   int i, num, sum = 0;
   printf("Enter any number to check perfect number: ");
   scanf("%d", &num);
   for(i = 1; i <= num / 2; i++)
   {
      if(num%i == 0)
      {
         sum += i;
      }
   }
   if(sum == num)
   {
      printf("%d is PERFECT NUMBER", num);
   }
   else
   {
      printf("%d is NOT PERFECT NUMBER", num);
   }

   return 0;
}
```

Output:-

```
Enter any number to check perfect number: 6
6 is PERFECT NUMBER
```

SLIP:-12.

Q 1) A Write a C Program to accept real number x and integer n and calculate the sum of first n terms of the series x+x/3!+x/5!+x/7!+…

```
#include<stdio.h>
#include<conio.h>
void main()
{
   long int x,i,j,k,n,sq,cnt;
   double fact,sum=0;
   clrscr();
   printf(\"\\n ENTER THE VALUE OF N: \");
   scanf(\"%ld\",&n);
   printf(\"\\n ENTER THE VALUE OF X: \");
   scanf(\"%ld\",&x);
   for(i=1,cnt=1;i<=n;i=i+2,cnt++)
   {
      for(j=1,sq=1;j<=i;j++)
      sq=sq*x;
      printf(\"\\n SQ = %ld\",sq);
      for(k=1,fact=1;k<=i;k++)
      fact=fact*k;
      printf(\"\\n fact = %7.2lf\",fact);
      if(cnt%2==1)
      sum=sum+(sq/fact);
      else
      sum=sum-(sq/fact);
      printf(\"\\n THE SUM OF THIS SERIES IS %7.2lf\\n\",sum);
   }
   getch();

}
```

OUTPUT:-

```
ENTER THE VALUE OF N: 5
 ENTER THE VALUE OF X: 2

 SQ = 2
 fact =    1.00
 THE SUM OF THIS SERIES IS    2.00

 SQ = 8
 fact =    6.00
 THE SUM OF THIS SERIES IS    0.67

 SQ = 32
 fact =  120.00
 THE SUM OF THIS SERIES IS    0.93
```

SLIP:-13.

Q 1) A i. Write a ‘C’ program to which accepts a character from the user and display its ASCII value. Also display its next and previous integer.

```
#include <stdio.h>
int main()
{
char ch;
printf("Enter character:\t");
scanf("%c", &ch);
printf("You entered: %c\n", ch);
printf("Previous character: %c\n", ch - 1);
printf("Next character: %c\n", ch + 1);
printf("\n Please enter any charecter \n");
ch=getchar();
printf("\nThe ASCII value of given charecter=%d",ch);
}
```

OUTPUT:-

```
Enter character: f
You entered: f
Previous character: e
Next character: g
The ASCII value of given charecter= 102
```

SLIP:-13.

Q 1) A ii. Write a ‘C’ program to display multiplication tables of n having 10 multiples.

```
#include <stdio.h>
int main() {
    int n, i;
    printf("Enter an integer: ");
    scanf("%d", &n);
    for (i = 1; i <= 10; ++i) {
        printf("%d * %d = %d \n", n, i, n * i);
    }
    return 0;
}
```

Output:-

```
Enter an integer: 9
9 * 1 = 9
9 * 2 = 18
9 * 3 = 27
9 * 4 = 36
9 * 5 = 45
9 * 6 = 54
9 * 7 = 63
9 * 8 = 72
9 * 9 = 81
9 * 10 = 90
```

SLIP:-13.

Q 1) A Accept two numbers and perform the following operation till the user selects Exit.

i. Maximum

ii. Display all numbers between the two

iii. Sum and average

iv. EXIT.

```
#include<stdio.h>
#include<stdlib.h>
int main()
{
      int n1,n2,i,ch,sum;
     float avg;
     printf("\n Enter number1 : ");
     scanf("%d",&n1);
     printf("\n Enter number2 : ");
     scanf("%d",&n2);
     printf("\n Menu : \n1. Maximum");
     printf("\n 2. Display all numbers between %d and %d",n1,n2);
     printf("\n 3. Sum and Average of two");
     printf("\n 4. Exit\n Enter your choice (1-4) : ");
     scanf("%d",&ch);
     switch(ch)
    {
       case 1: if(n1>n2)
                    printf("\n Maximum = %d",n1);
                else
                    printf("\n Maximum = %d",n2);
      break;
      case 2: for(i=n1;i<=n2;i++)
                   printf("%d\t",i);
      break;
      case 3: sum=n1+n2;
                avg=(n1+n2)/2;
               printf("\n Sum = %d and Average = %f",sum,avg);
     break;
     case 4: exit(0);
     break;
     default: printf("\n invalid input..");
   }
   return 0;
}
```

OUTPUT:-

```
Enter number1 : 1

 Enter number2 : 5

 Menu :
1. Maximum
 2. Display all numbers between 1 and 5
 3. Sum and Average of two
 4. Exit
 Enter your choice (1-4) : 1
 Maximum = 5
 Enter your choice (1-4) : 2
1       2       3       4       5
Enter your choice (1-4) : 3
 Sum = 6 and Average = 3.000000
```

SLIP:-14.

Q 1) A i. Write a ‘C’ program to accepte a number and check if it is positive,negative or zero.

```
#include <stdio.h>
int main() {
   double num;
   printf("Enter a number: ");
   scanf("%lf", &num);
   if (num <= 0.0) {
      if (num == 0.0)
         printf("You entered 0.");
      else
         printf("You entered a negative number.");
   } else
      printf("You entered a positive number.");
   return 0;
}
```

OUTPUT:-

```
Enter a number: 12
You entered a positive number.


Enter a number: 0
You entered 0.
```

SLIP:-14.

Q 1) A ii. Write a 'C' Program to accept a single digit and display it in words. For example, Input=9 Output=Nine

```
#include<conio.h>
void main()
{
  int ch;
  printf("Enter Digit: ");
  scanf("%d",&ch);
  switch(ch)
  {
case 0:
    printf("Zero\n");
    break;
case 1:
    printf("one\n");
    break;
case 2:
    printf("Two\n");
    break;
case 3:
    printf("Three\n");
    break;
case 4:
    printf("Four\n");
    break;
case 5:
    printf("Five\n");
    break;
case 6:
    printf("Six\n");
    break;
case 7:
    printf("Seven\n");
    break;
case 8:
    printf("Eight\n");
    break;
case 9:
    printf("Nine\n");
```

```
      break;
default:
      printf("invalid digit\nPlease try again ....\n");
      break;
   }
}
```

OUTPUT:

```
Enter Digit: 9
Nine
```

SLIP:-14.

Q 1) A Write a ‘C’ program to copy one matrix to another. Display the copied matrix.

```
#include <stdio.h>
#define MAX_SIZE 100
int main()
{
   int source[MAX_SIZE], dest[MAX_SIZE];
   int i, size;
   printf("Enter the size of the array : ");
   scanf("%d", &size);

   printf("Enter elements of source array : ");
   for(i=0; i<size; i++)
   {
      scanf("%d", &source[i]);
   }
   for(i=0; i<size; i++)
   {
      dest[i] = source[i];
   }
   printf("\nElements of source array are : ");
   for(i=0; i<size; i++)
   {
      printf("%d\t", source[i]);
   }
   printf("\nElements of dest array are : ");
   for(i=0; i<size; i++)
   {
      printf("%d\t", dest[i]);
   }
   return 0;
}
```

OUTPUT:-

```
Enter the size of the array : 10
Enter elements of source array : 10 20 30 40 50 60 70 80 90 100
Elements of source array are : 10    20    30    40    50    60    70    80    90    100
Elements of dest array are : 10    20    30    40    50    60    70    80    90    100
```

SLIP:-15.

Q 1) A i.Write a ‘C’ program to perform all arithmetical operations on two integers.

```
#include <stdio.h>
int main()
{
   int num1, num2;
   int sum, sub, mult, mod;
   float div;
   printf("Enter any two numbers: ");
   scanf("%d%d", &num1, &num2);
   sum = num1 + num2;
   sub = num1 - num2;
   mult = num1 * num2;
   div = (float)num1 / num2;
   mod = num1 % num2;
   printf("SUM = %d\n", sum);
   printf("DIFFERENCE = %d\n", sub);
   printf("PRODUCT = %d\n", mult);
   printf("QUOTIENT = %f\n", div);
   printf("MODULUS = %d", mod);

   return 0;
}
```

OUTPUT:-

```
Enter any two numbers : 20 10
SUM = 30
DIFFERENCE = 10
PRODUCT = 200
QUOTIENT = 2.000000
MODULUS = 0
```

SLIP:-15.

Q 1) A ii. Write a ‘C’ program to calculate the factorial of a number using function.

```
#include<stdio.h>
long int multiplyNumbers(int n);
int main() {
   int n;
   printf("Enter a positive integer: ");
   scanf("%d",&n);
   printf("Factorial of %d = %ld", n, multiplyNumbers(n));
   return 0;
}

long int multiplyNumbers(int n) {
   if (n>=1)
      return n*multiplyNumbers(n-1);
   else
      return 1;
}
```

OUTPUT:-

```
Enter a positive integer: 6
Factorial of 6 = 720
```

SLIP:-15.

Q 1) A Write a 'C' program to accept two matrices of size m x n and calculate Additional of Matrices.

```
 #include<stdio.h>
#define ROW 2
#define COL 3
int main()
{
   int i, j, arr1[ROW][COL], arr2[ROW][COL];
   printf("Enter first matrix: \n");
   for(i = 0; i < ROW; i++)
   {
      for(j = 0; j < COL; j++)
      {
         scanf("%d", &arr1[i][j]);
      }
   }
   printf("\nEnter second matrix: \n");
   for(i = 0; i < ROW; i++)
   {
      for(j = 0; j < COL; j++)
      {
         scanf("%d", &arr2[i][j]);
      }
   }
   printf("\narr1 + arr2 = \n");
   for(i = 0; i < ROW; i++)
   {
      for(j = 0; j < COL; j++)
      {
         printf("%5d ", arr1[i][j] + arr2[i][j]);
      }
      printf("\n");
   }
   return 0;
}
```

OUTPUT:-

```
Enter first matrix:
1 2 3
4 5 6

Enter second matrix:
2 4 6
8 10 12

arr1 + arr2 =
   3    6    9
  12   15   18
```

SLIP:-16.

Q 1) A i.Write a ‘C’ program to find the area and perimeter of rectangle.

```
#include <stdio.h>
int main()
{
 float length,breadth, area=0,perim=0;
printf(“Enter the length of rectangle:”);
scanf(“%f”,,&length);
printf(“Enter the breadth of rectangle:”);
scanf(“%f”,,&breadth);
area=length * breadth;
perim=2*(length + breadth);
printf(“ \n Area of rectangle =%f”,area);
printf(“\n Perimeter of rectangle= %f”, perim);
return 0;
}
```

OUTPUT:-

```
Enter the length of rectangle:5
Enter the breadth of rectangle:10
 Area of rectangle =50.000000
Perimeter of rectangle=30.000000
```

SLIP:-16.

Q 1) A ii. Write a ‘C’ program to display n lines of the following pattern.

1

2 3

4 5 6

```
#include<stdio.h>
int main()
{
  int i,j,k;
  k=1;
  for(i=1;i<5;i++)
  {
    for(j=1;j<=i;j++)
    {
      printf("%d",k++);
    }
    printf("\n");
  }
  return 0;
}
```

OUTPUT:-

1

2 3

4 5 6

SLIP:-16.

Q 1) A Write a ‘C’ program to find the transpose of a mXn matrix.

```
#include <stdio.h>
int main()
{
   int m, n, i, j, matrix[10][10], transpose[10][10];
   printf("Enter rows and columns :\n");
   scanf("%d%d", &m, &n);
   printf("Enter elements of the matrix\n");
   for (i= 0; i < m; i++)
      for (j = 0; j < n; j++)
         scanf("%d", &matrix[i][j]);
   for (i = 0;i < m;i++)
      for (j = 0; j < n; j++)
         transpose[j][i] = matrix[i][j];
   printf("Transpose of the matrix:\n");
   for (i = 0; i< n; i++) {
      for (j = 0; j < m; j++)
         printf("%d\t", transpose[i][j]);
      printf("\n");
   }
   return 0;
}
```

OUTPUT:-

```
Enter rows and columns :
2 3
Enter elements of the matrix
1 2 3
2 4 5
Transpose of the matrix:
1    2
2    4
3    5
```

SLIP:-17.

Q 1) A i. Write a ‘C’ program to accept a number and check number is positive or negative.

```
#include <stdio.h>
int main()
 {
    double num;
    printf("Enter a number: ");
    scanf("%lf", &num);
    if (num <= 0.0) {
        if (num == 0.0)
            printf("You entered 0.");
        else
            printf("You entered a negative number.");
    }
    else
        printf("You entered a positive number.");

    return 0;
}
```

OUTPUT:-

Enter a number: 12

You entered a positive number.

Enter a number: -5

You entered a negative number.

SLIP:-17.

Q 1) A ii. Write a 'C' program to accept a single digit number from the user and display it in words. Input = 9, output = Nine.

```
#include<conio.h>
void main()
{
   int ch;
   printf("Enter Digit: ");
   scanf("%d",&ch);
   switch(ch)
   {
case 0:
      printf("Zero\n");
      break;
case 1:
      printf("one\n");
      break;
case 2:
      printf("Two\n");
      break;
case 3:
      printf("Three\n");
      break;
case 4:
      printf("Four\n");
      break;
case 5:
      printf("Five\n");
      break;
case 6:
      printf("Six\n");
      break;
case 7:
      printf("Seven\n");
      break;
case 8:
      printf("Eight\n");
      break;
case 9:
      printf("Nine\n");
      break;
default:
      printf("invalid digit\nPlease try again ....\n");
      break;
    }
```

}
OUTPUT:

Enter Digit: 9
Nine

SLIP:-17.

Q 1) A . Write a ‘C’ program to calculate occurrences of a number in an array of n integers.

```
#include <stdio.h>
int main()
{
	int Size, i, num, occr = 0;
	printf("Please Enter the Array size = ");
	scanf("%d", &Size);
	int arr[Size];
	printf("Enter the Array %d elements : ", Size);
	for (i = 0; i < Size; i++)
	{
		scanf("%d", &arr[i]);
	}

	printf("Please Enter the Array Item to Know = ");
	scanf("%d", &num);
	for (i = 0; i < Size; i++)
	{
		if (arr[i] == num)
		{
			occr++;
		}
	}

	printf("%d Occurred %d Times.\n", num, occr);
}
```

OUTPUT:

Please Enter the size = 10

Enter the 10 elements : 2 22 33 2 44 2 55 7 2 90

Please Enter the Item to Know = 2

2 Occurred 4 Times.

SLIP:-18.

Q 1) A i. Write a 'C' program to Accept dimensions of a cylinder and print the surface area and volume. (surface area = 2π r2 + 2π r h, volume = π r2 h)

```
#include<stdio.h>
#define pi 3.142
int main()
{
    int r,h;
    float sa,v;

    printf("\n Enter radius of cylinder : ");
    scanf("%d",&r);
    printf("\n Enter height of cylinder : ");
    scanf("%d",&h);

    v=(pi*r*r*h);
    sa=(2*pi*r*r)+(2*pi*r*h);

    printf("\n Surface Area = %f",sa);
    printf("\n Volume = %f",v);

    return 0;
}
```

OUTPUT:-

```
Enter radius of cylinder : 6

Enter height of cylinder : 5

Surface Area = 414.743988

 Volume = 565.559998
```

SLIP:-18.

Q 1) A ii. Write a ‘C’program to Accept two integers x and y and calculate the sum of all integers between x and y.

```
#include <stdio.h>
void main(void)
{
   int a = 1;
   int b = 0;
   int total_sum = 0;
   while (a > b)
 {
       printf("The second number should be bigger than the first one.\n");
       printf("Type the first number : \n");
       scanf("%d", &a);
       printf("Type the second number : \n");
       scanf("%d", &b);
   }
   while (a<= b)
 {
       total_sum += a;
       a++;
   }
   printf("Result : %d\n", total_sum);
}
```

Output:

```
The second number should be bigger than the first one.
Type the first number :
5
Type the second number :
9
Result : 35
```

SLIP:-18.

Q 1) A. Write a 'C' program to accept two matrices of size m x n and find multiplication of Matrices.

```
#include<stdio.h>
int main()
{
        int a[3][3],b[3][3],c[3][3],i,j,k,sum;

   printf("\nEnter the matrix elements of A\n");
   for(i=0;i<3;i++)
   {
      for(j=0;j<3;j++)
      {
         scanf("%d",&a[i][j]);
      }
      printf("\n");
   }
   printf("\nEnter the matrix elements of B\n");
   for(i=0;i<3;i++)
   {
      for(j=0;j<3;j++)
      {
         scanf("%d",&b[i][j]);
      }
      printf("\n");
   }
   for(i=0;i<3;i++)
   {
      for(j=0;j<3;j++)
      {
         sum=0;
         for(k=0;k<3;k++)
         {
            sum=sum+a[i][k]*b[k][j];
         }
         c[i][j]=sum;
      }
   }
   printf("\nProduct of two matrix is:\n\n");
   for(i=0;i<3;i++)
   {
      for(j=0;j<3;j++)
      {
         printf("%d",c[i][j]);
         printf("\t");
```

```
        }
        printf("\n\n");
    }

        return 0;
}
```

OUTPUT:

```
Enter the matrix elements of A
2 4 6
2 4 6
2 4 6

Enter the matrix elements of B
1 2 3
1 2 3
1 2 3

Product of two matrix is:

12 24 36
12 24 36
12 24 36
```

SLIP:-19.

Q 1) A i. Write a ‘C’ program to accept two integers and perform all arithmetic operations.

```
#include <stdio.h>
void main()
{
   int num1, num2;
   int sum, diff, mul, div, mod, quo;

   printf("Enter first number: ");
   scanf("%d", &num1);
   printf("Enter second number: ");
   scanf("%d", &num2);

   sum = num1 + num2;
   diff = num1 - num2;
   mul = num1 * num2;
   mod = num1 % num2;
   quo = num1 / num2;

   printf("Sum = %d\n", sum);
   printf("Difference = %d\n", diff);
   printf("Multiply = %d\n", mul);
   printf("Modulus = %d\n", mod);
   printf("Quotient = %d\n", quo);
}
```

OUTPUT:-

```
Enter first number: 20
Enter second number: 10
Sum = 30
Difference = 10
Multiply = 200
Modulus = 0
Quotient = 2
```

SLIP:-19.

Q 1) A ii. Write a ‘C’ program to check if a character is an alphabet, digit or a special symbol. If it is an alphabet, check if it is uppercase or lowercase.

```
#include<stdio.h>
int main()
{
 char ch;
 printf("\nEnter Any Character :");
 scanf("%c",&ch);
 if(ch>='0' && ch<='9')
 {
  printf("\n Entered Character is Digit");
 }
 else if(ch>='A' && ch<='Z')
 {
  printf("\n Entered Character is Capital Letter");
 }
 else if(ch>='a' && ch<='z')
 {
  printf("\n Entered Character is Small Letter");
 }
 else
 {
  printf("\n Entered Character is Special Character");
 }
 return 0;
}
```

OUTPUT:-

Enter Any Character: A

Entered Character is Capital Letter

Enter Any Character: a

Entered Character is Small Letter

Enter Any Character: @

Entered Character is Special Character

SLIP:-19.

Q 1) A Write a 'C' program to multiply two matrices. Write separate functions to accept, display and multiply the matrices.

```
#include<stdio.h>
void accept(int [10][10],int,int);
void add(int [10][10],int [10][10],int,int);
void mul(int [10][10],int [10][10],int,int,int);
void display(int [10][10],int,int);
main()
{
int a[10][10],b[10][10];
int r1,c1,r2,c2;
printf("For 1st Matrix\n");
printf("Enter no of rows:");
scanf("%d",&r1);
printf("Enter no of columns:");
scanf("%d",&c1);
printf("For 2nd Matrix\n");
printf("Enter no of rows:");
scanf("%d",&r2);
printf("Enter no of columns:");
scanf("%d",&c2);
printf("Enter elements of 1st matrix");
accept(a,r1,c1);
printf("Enter elements of 2nd matrix");
accept(b,r2,c2);
if((r1==r2)&&(c1==c2))
add(a,b,r1,c1);
else
printf("Addition not possible");
if(c1==r2)
mul(a,b,r1,c1,c2);
else
printf("Multiplication not possible");
}
void accept(int a[10][10],int r,int c)
{int i,j;
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
scanf("%d",&a[i][j]);
}
}
}
```

```
void add(int a[10][10],int b[10][10],int r1,int c1)
{
int i,j;
int d[10][10];
for(i=0;i<r1;i++)
{
for(j=0;j<c1;j++)
{
d[i][j]=a[i][j]+b[i][j];
}
}
printf("Addition:\n");
display(d,r1,c1);
}
void mul(int a[10][10],int b[10][10],int r1,int c1,int c2)
{
int i,j,v[10][10],k;
for(i=0;i<r1;i++)
{
for(j=0;j<c2;j++)
{
v[i][j]=0;
for(k=0;k<c1;k++)
{
v[i][j]=v[i][j]+(a[i][k]*b[k][j]);
}
}
}
printf("Multiplication:\n");
display(v,r1,c2);
}
void display(int a[10][10],int r,int c)
{int i,j;
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
printf("%d\t",a[i][j]);
}
printf("\n");
}
}
```

OUTPUT:-

```
For 1st Matrix
Enter no of rows:2
Enter no of columns:2
For 2nd Matrix
Enter no of rows:2
Enter no of columns:2
Enter elements of 1st matrix
3
4
5
6
Enter elements of 2nd matrix
7
8
9
0
Addition:
10      12
14      6
Multiplication:
57      24
89      40
```

SLIP:-20.

Q 1) A i. Write a ‘C’ program to accept radius of circle and calculate area and circumference.

```
#include<stdio.h>
int main()
 {
        float radius, area;
        printf("\nEnter the radius of Circle : ");
        scanf("%d", &radius);
        area = 3.14 * radius * radius;
        printf("\nArea of Circle : %f", area);
        return (0);
}
```

OUTPUT:-

```
Enter radius of a circle : 1
Area of circle : 3.14
Circumference  : 6.28
```

SLIP:-20.

Q 1) A ii. Write a function in 'C', which accepts a character and integer n as parameter and displays the next n characters.

```
#include <stdio.h>
int display(char);
int main()
{
 char ch,c;
 printf("Enter character:");
 scanf("%c", &ch);
 display(ch);
}
int display(char ch)
{
 int n,i;
 printf("how many next char:");
 scanf("%d",&n);
 printf("\nYou entered:\t%c\n", ch);
 printf("Next character :");
 for(i=0;i<n;i++)
 {
  ch=ch+1;
     printf("\t%c", ch);
 }
 return 0;
}
```

OUTPUT:-

```
Enter character:r
how many next char:5

You entered:    r
Next character :        s       t       u       v       w
```

SLIP:-20.

Q 1) A Write a 'C' program to accept n integers and sort them. Display the sorted elements.

```
#include <stdio.h>
 #include <conio.h>
int main()
{
   int a[10000],i,n,j,temp;
   printf("Enter size of the  array : ");
   scanf("%d", &n);
   printf("Enter elements in array : ");
   for(i=0; i<n; i++)
   {
      scanf("%d",&a[i]);
   }
   for(i=0; i<n-1; i++)
   {
      for(j=0; j<n-i-1; j++)
      {
         if(a[j]>a[j+1])
         {
                  temp=a[j];
                  a[j]=a[j+1];
                  a[j+1]=temp;
                    }
      }
   }
   printf("\narray elements in ascending order:\n ");
   for(i=0; i<n; i++)
   {
     printf("%d ",a[i]);
   }

 }
```

OUTPUT:-

```
Enter size of the  array: 5
Enter elements in array: 1
0
-5
25
-10

array elements in ascending order:
-10 -5 0 1 25
```