ASSIGNMENT:-1

QUESTION 1:-

INPUT: mark1 , mark2

OUTPUT: average=(mark1+mark2)/2

STEP 1: Start

STEP 2: Declare the variables mark1, mark 2,avg and sum .

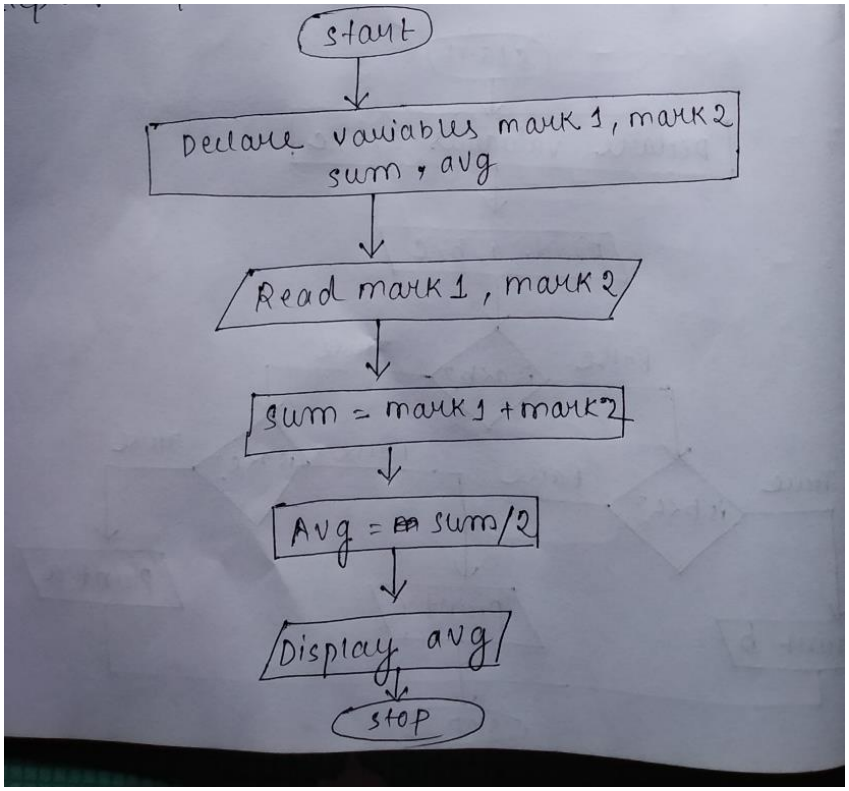
STEP 3: Read the variables mark1 and mark2.

STEP 4: Add both the marks and assign the sum and calculate the avg by dividing the sum by 2.

STEP 5: Print avg.

STEP 6: Stop.

FLOWCHART



QUESTION:-2

INPUT: isd , rtd , td

OUTPUT: fine.

STEP 1 : Start.

STEP 2 : Declare isd , rtd , td,x,y,z,a,charge

STEP 3 : Read issued date ,return date and today assign them in isd , rtd and td respectively.

STEP 4 : Calculate total date assigned it to x

x<- rtd - isd

STEP 5 : Now calculate days of book kept and assign it to y

y<-td-isd

STEP 6 : Calculate total days to be fined and assign it to z

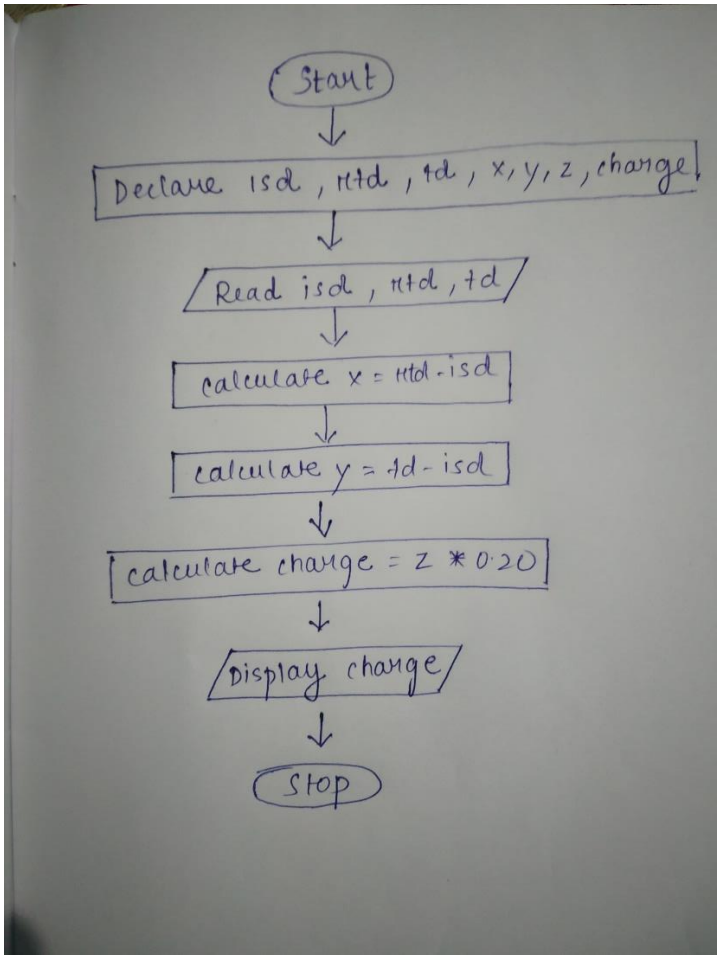
Z<-y-x

STEP 7: now calculate charges charge<-z*0.20

STEP 8 : Display charge

STEP 9: Stop

FLOWCHART:



QUESTION:-3

INPUT: cst,disc

OUTPUT:netp

STEP 1 : Start.

STEP 2 : Declare cst,disc,dp,netp.

STEP 3 : Initialize cst and disc.

STEP 4 : Calculate discounted price and assig in dp.

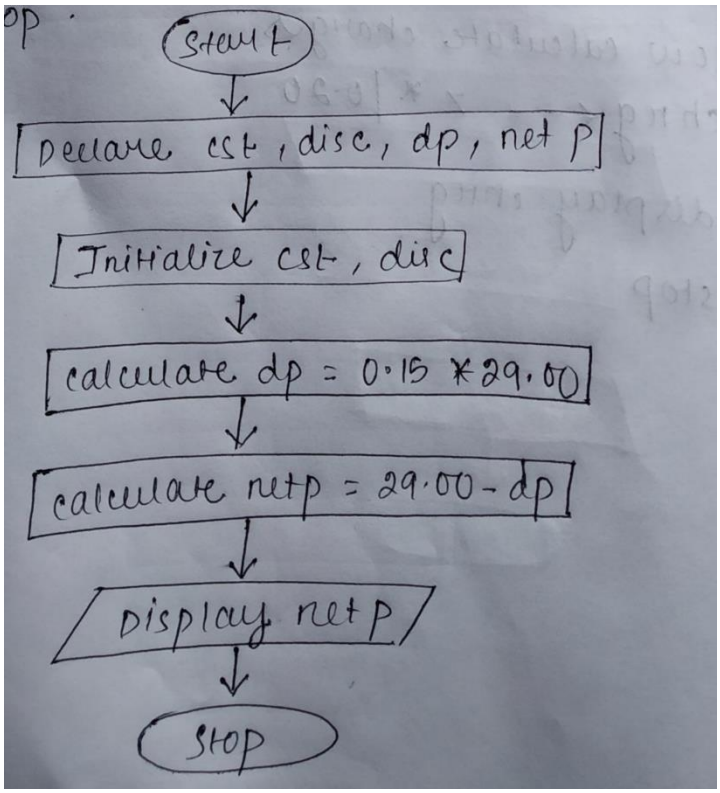
Dp<-0.15*cst

STEP 5 : Calculate net price and assign in netp.

STEP 6 : Display netp.

STEP 7 : Stop.

FLOWCHART:



QUESTION:-4

INPUT: a,b,c

OUTPUT: Smallest among three

STEP 1 : Start

STEP 2 : declare a, b , c and smallest

STEP 3 : Read a,b,c

STEP 4 : Compare a with b and c

(a<b) (a<c) then a is smallest

STEP 5 : Compare b with a and c

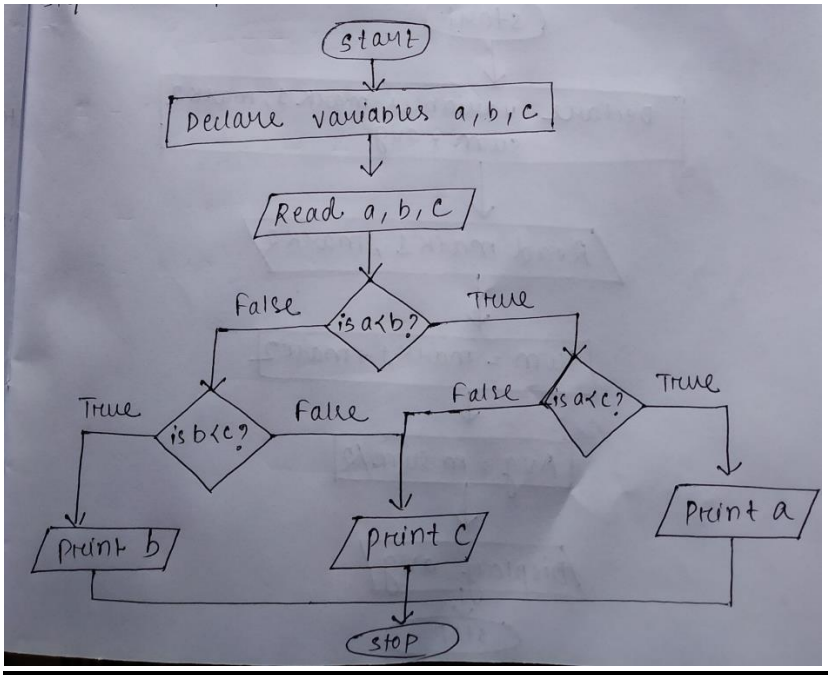
(b<a) (b<c) then b is smallest

STEP 6 : else c is smallest;

STEP 7: Display Smallest

STEP 8 : Stop.

FLOWCHART:



QUESTION:-5

INPUT: a,b,c

OUTPUT: x1,x2

STEP 1 : Start

STEP 2 : Declare a, b,c,X1,X2.

STEP 3 : read a, b ,c

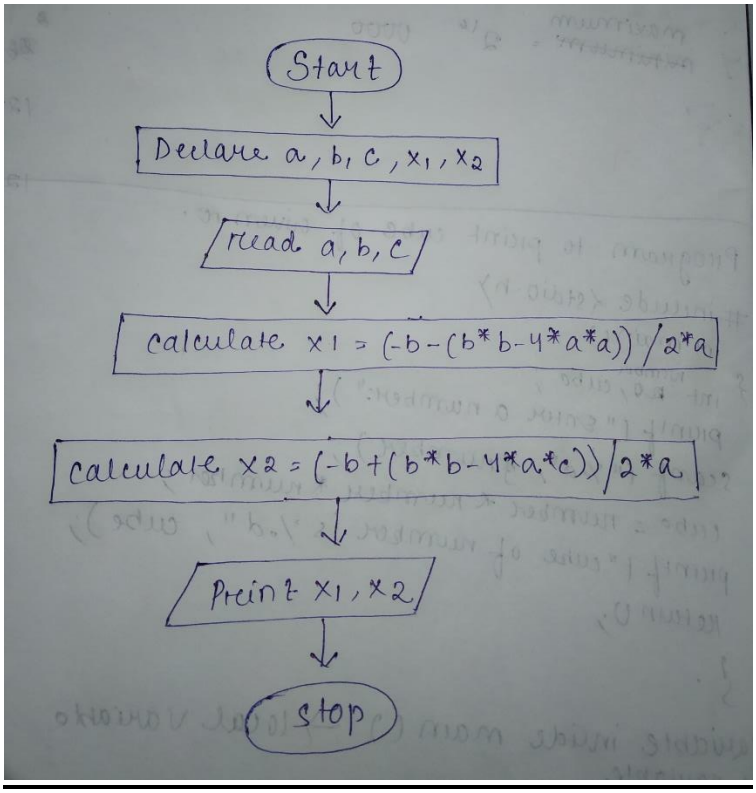
STEP 4 : Calculate x1=(-b-(b*b-4*a*c))/2*a.

STEP 5 : Calculate x2=(-b+(b*b-4*a*c))/2*a.

STEP 6 : Print x1,x2.

STEP 7 : Stop

FLOWCHART:



QUESTION : - 6

INPUT:no

OUTPUT: factorial

STEP 1 : Start

STEP 2 : Declare no,fact,i.

STEP 3 : Read no

STEP 4 : Initialize i=1 and fact =1.

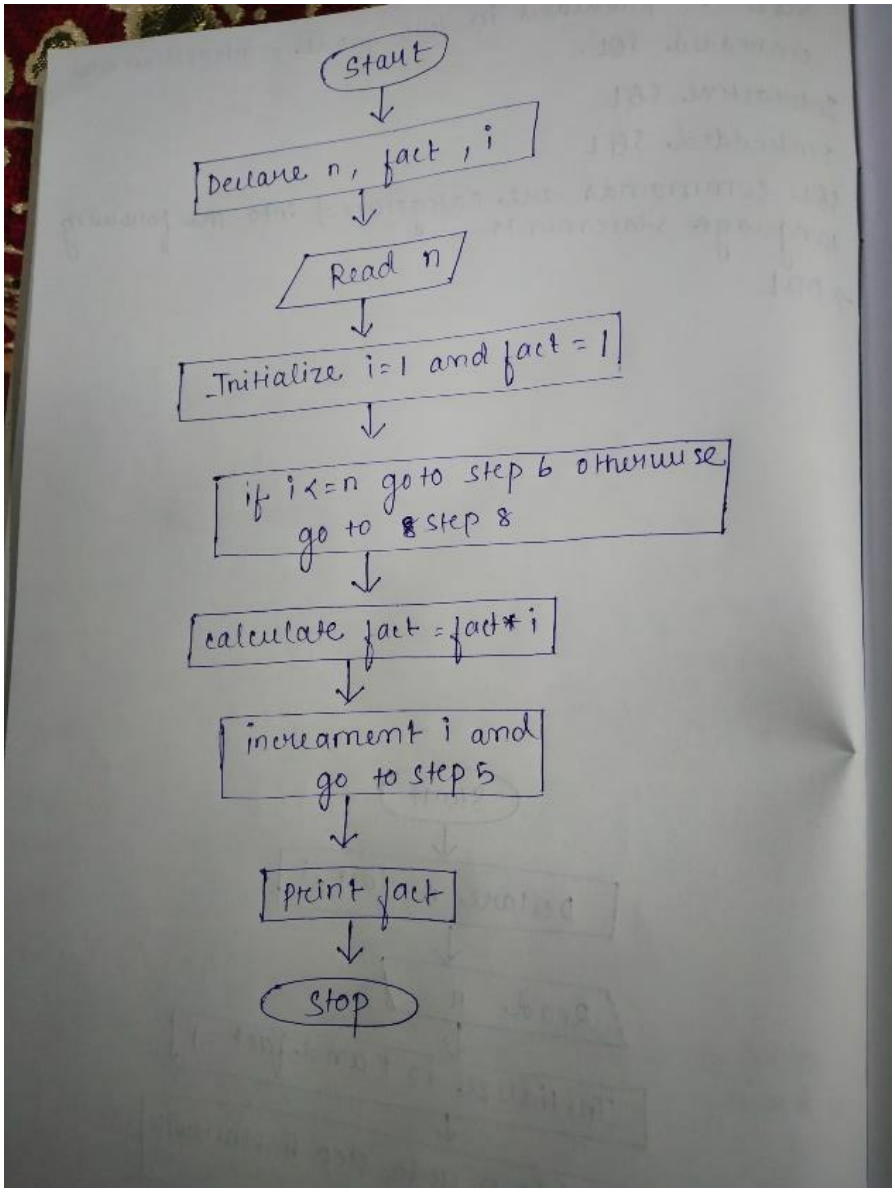
STEP 5 : If i < no then go to STEP6 otherwise go to STEP8

STEP 6 : Calculate fact = fact *i.

STEP 7 : Increament i and go to STEP5.

STEP 8 : Print fact.

STEP 9 : Stop



ASSIGNMENT:-2

QUESTION 1:

```
#include <stdio.h>
int main()
{
   printf("SWAGATIKA BARDHAN-SOA University");
   return 0;
```

```
}
```

OUTPUT:

SWAGATIKA BARDHAN-SOA University

QUESTION 2:

```
#include <stdio.h>
 int main()
  {
     printf("Name   : SWAGATIKA BARDHAN\n");
     printf("Mobile   :7873000111\n");
     printf("Email ID : bardhanswagatika@gmail.com\n");
     return(0);
  }
```

OUTPUT:

Name : SWAGATIKA BARDHAN

Mobile   :7873000111

Email ID : bardhanswagatika@gmail.com

QUESTION:3

```
#include <stdio.h>
int main()
{
  int Integer;
  char Character;
  float InputFloat;
   printf(" Please Enter an Integer Value :  ");
  scanf("%c", &Integer);
```

```
   printf(" Please Enter a character :  ");
  scanf("%d", &Character);
   printf(" Please Enter Float Value :  ");
  scanf("%f", &InputFloat);
   printf(" \n The Integer Value that you Entered is :  %d", Integer);
  printf(" \n The Character that you Entered is :  %c", Character);
  printf(" \n The Float Value that you Entered is :  %f", InputFloat);
  return 0;
}
```

OUTPUT:

```
Please Enter an Integer Value :  8
 Please Enter a character :  S
  Please Enter Float Value :   4.6
```

QUESTION:4

```
#include<stdio.h>
int main()
{
  int number, cube;
   printf(" \n Please Enter any integer Value : ");
  scanf("%d", &number);
    cube = number * number * number;
    printf("\n Cube of a given number %d is  =  %d", number, cube);
 return 0;
}
```

OUTPUT:

```
Please Enter any integer Value : 8
```

Cube of a given number 8 is = 512

QUESTION:-5

```
#include <stdio.h>
int main() {
int a,b,c,d,e,sum;
printf("enter five numbers");
scanf("%d%d%d%d%d",&a,&b,&c,&d,&e);
sum=a+b+c+d+e;
printf("\nSum of five number is = %d",sum);
return 0;
}
```

OUTPUT:

```
enter five numbers:1 2 3 4 5
Sum of five number is = 15
```

QUESTION :-6

```
#include <stdio.h>
int main()
{
   int mrk1, mrk2;
   float avg;

   printf("Enter first number: ");
   scanf("%d",&mrk1);
   printf("Enter second number: ");
   scanf("%d",&mrk2);
avg= (mrk1+mrk2)/2;
```

```
    printf("Average of %d and %d is:%f",mrk1,mrk2,avg);
  return 0;
}
```

OUTPUT:

Enter first number: Enter second number: Average of 45 and 88 is:66.000000

QUESTION:-7

```
#include <stdio.h>
int main()
{
    int isd,rtd,td,x,y,z;
    float charge;
    printf("Enter issued date:");
    scanf("%d",&isd);
    printf("Enter return date:");
    scanf("%d",&rtd);
    printf("Enter today:");
    scanf("%d",&td);
    x=rtd-isd;
    y=td-isd;
    z=y-x;
    charge=z*0.20;
    printf("Total fined charge is %f :",charge);
     return 0;
}
```

OUTPUT:

Enter issued date:12

Enter return date:20

Enter today:28

Total fined charge is 1.600000 :

QUESTION:-8

```
#include <stdio.h>
int main()
{
float disc=0.15,cst=29.00,dp,netp;
dp=29.00*0.15;
netp=29.00-dp;
printf("net price for shirt is %f:",netp);
    return 0;
}
```

OUTPUT:

net price for shirt is 24.650000:

QUESTION:9

```
#include <stdio.h>
int main()
{
   int a, b;
   printf("Enter Value of a:");
```

```
    scanf("%d", &a);
    printf("Enter Value of b:");
    scanf("%d", &b);
   int c = a;
    a = b;
    b = c;
   printf("\nAfter Swapping: a= %d, b = %d", a, b);
    return 0;
}
```

OUTPUT:

```
Enter Value of a:Enter Value of b:
After Swapping: a= 6, b = 5
```

QUESTION:10

```
#include <stdio.h>
int main()
{
    int a=40, b=50;
    printf("Before swap a=%d b=%d:",a,b);
   a = a+b;
    b=a-b;
    a=a-b;
   printf("\nAfter Swapping: a= %d, b = %d", a, b);
    return 0;
}
```

OUTPUT:

```
Before swap a=40 b=50:
```

After Swapping: a= 50, b = 40

ASSIGNMENT:3

QUESTION:-1

```
#include<stdio.h>
int main()
{
   int a=125,b=12345,e,h,i;
   long ax=1234567890,j,k,l,m;
   short s=4043;
   float x=2.13459,f;
   double dx=1.1415927,g;
   char c='W';
   unsigned long ux=2541567890;
   e=a+c;
   printf("a+c=%d",&e);
   f=x+c;
   printf("x+c=%f",&f);
   g=dx+x;
   printf("dx+x=%lf",&g);
   h=a+x;
   printf("a+x=%d",&h);
   i=s+b;
   printf("s+b=%d",&i);
```

```
    j=ax+b;
    printf("ax+b=%ld",&j);
    k=s+c;
    printf("s+c=%ld",&k);
    l=ax+c;
    printf("ax+c=%ld",&l);
    m=ax+ux;
    printf("ax+ux=%ld",&m);
}
```

OUTPUT:

```
a+c=-1057560308x+c=0.000000dx+x=0.000000a+x=-1057560304s+b=-1057560300ax+b=140732135827752s+c=140732135827760ax+c=140732135827768ax+ux=140732135827776
```

QUESTION:2

```
#include<stdio.h>
int main()
{
    int d, yr, w;
    d = 1180;
    yr = d/365;
    w = (d % 365)/7;
    d = d- ((yr*365) + (w*7));
    printf("Years: %d\n", yr);
    printf("Weeks: %d\n", w);
```

```
    printf("Days: %d \n", d);
    return 0;
}
```

OUTPUT

Years: 3

Weeks: 12

Days: 1

QUESTION:-3

```
#include <stdio.h>
int main()
  {
float weight1, No1, weight2, No2, result;
    printf("Enter the weight of first item :");
scanf("%f", &weight1);
printf("Enter the no of purchase of First item ");
scanf("%f", &No1);
printf("Enter the weight of second item: ");
scanf("%f", &weight2);
printf("Enter the no of purchase  of second item");
scanf("%f", &No2);
result = ((weight1 * No1) + (weight2 * No2)) / 2;
printf("Average Value = %f\n", result);
return 0;
}
```

OUTPUT:-

```
Enter the weight of first item :40

Enter the no of purchase of First item 4

Enter the weight of second item: 30

Enter the no of purchase  of second item6

Average Value = 170.000000
```

QUESTION:-4

```
#include <stdio.h>

int main()

{

enum week{Sun, Mon, Tue, Wed, Thu, Fri, Sat};

printf("Sun = %d", Sun);

printf("\nMon = %d", Mon);

printf("\nTue = %d", Tue);

printf("\nWed = %d", Wed);

printf("\nThu = %d", Thu);

printf("\nFri = %d", Fri);

printf("\nSat = %d", Sat);

return 0;

}
```

OUTPUT:

Sun = 0

Mon = 1

Tue = 2

Wed = 3

Thu = 4

Fri = 5

Sat = 6

QUESTION:-5

```
#include <stdio.h>
int main(){
   float celsius,fahrenheit;
   printf("Enter temperature in celsius:");
   scanf("%f",&celsius);
   fahrenheit=(celsius*9/5)+32;
   printf("the temperature in fahrenheit=%f",fahrenheit);
   return 0;
}
```

OUTPUT:

```
Enter temperature in celsius:6
the temperature in fahrenheit=42.799999
```

QUESTION:-6

```
#include<stdio.h>
int main()
{
   int minutes, hr,min;
   minutes = 1000;
   hr = minutes/60;
   min=minutes%60;
   printf("hours: %dhr\n", hr);
```

```
    printf("minutes: %dmins\n", min);
    return 0;
}
```

OUTPUT:

hours: 16hr

minutes: 40mins

QUESTION:7

```
#include <stdio.h>
int main()
{
    float height, width, perimeter;
    printf("Enter height of the rectangle: ");
    scanf("%f", &height);
    printf("Enter width of the rectangle: ");
    scanf("%f", &width);
    perimeter = 2 * (height + width);
    printf("Perimeter of rectangle = %f units ", perimeter);
 return 0;
}
```

OUTPUT:

Enter height of the rectangle: 45

Enter width of the rectangle: 20

Perimeter of rectangle = 130.000000 units

QUESTION:-8

```
#include<stdio.h>
int main()
{
   int a=10,b=20,c;
   c=a+b;
   printf("a+b=%d\n",c);
   c=a/b;
   printf("a/b=%d\n",c);
   c%=a;
   printf("c=%d\n",c);
   printf("%d>=%d is %d\n",a,b,a>=b);
   c=a!=b;
   printf("a!=b is %d\n",c);

}
```

OUTPUT:-

```
a+b=30
a/b=0
c=0
10>=20 is 0
a!=b is 1
```

QUESTION:-9

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

```
{
 int a=21,b=15,c=15,num=100,i,result;
 printf("output=%d",a&b);
 printf("output=%d",a|b);
 for(i=0;i<2;i++)
 {
    printf("rightshift by %d:%d\n",i,num>>i);
 }
 i=((num==106)?(2):(3));
 printf("the value of i is :%d\n",i);
 result=(b==c)||(c>a);
 printf("((b==c)||((c>a)) is %d\n",result);
 return 0;
}
```

OUTPUT:-

output=5output=31rightshift by 0:100

rightshift by 1:50

the value of i is :3

((b==c)||((c>a)) is 1

QUESTION:10

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

```
    int i;
    float f;
    double d;
    char c;
    printf("Size of int: %zu bytes\n", sizeof(int));
    printf("Size of float: %zu bytes\n", sizeof(float));
    printf("Size of double: %zu bytes\n", sizeof(double));
    printf("Size of char: %zu byte\n", sizeof(char));
     return 0
}
```

OUTPUT:-

Size of int: 4 bytes

Size of float: 4 bytes

Size of double: 8 bytes

Size of char: 1 byte

ASSIGNMENT:-4

QUESTION:-1

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

  printf("Input a character\n");
  scanf("%c", &ch);

  if ((ch >= 'a' && ch <= 'z') || (ch >= 'A' &&ch <= 'Z')) {
    if (ch=='a' || ch=='A' || ch=='e' || ch=='E' || ch=='i' || ch=='I' || ch=='o' || ch=='O' || ch=
= 'u' || ch=='U')
      printf("%c is a vowel.\n", ch);
```

```
    else
      printf("%c is a consonant.\n", ch);
  }
  else
    printf("%c is neither a vowel nor a consonant.\n", ch);

  return 0;
}
```

OUTPUT:

```
Input a character

i

i is a vowel.
```

QUESTION:-2

```
#include <stdio.h>

#include <math.h> /* Used for sqrt() */

int main()

{

    float a, b, c ;

    float root1, root2, img;

    float discriminant;

   printf("Enter values of a, b, c");

    scanf("%f%f%f", &a, &b, &c);

    discriminant = (b * b) - (4 * a * c);

  if(discriminant > 0)

    {

        root1 = (-b + sqrt(discriminant)) / (2*a);

        root2 = (-b - sqrt(discriminant)) / (2*a);

        printf("Two distinct and real roots exists: %f and %f", root1, root2);

    }

    else if(discriminant == 0)
```

```
    {
        root1 = root2 = -b / (2 * a);
        printf("Two equal and real roots exists: %f and %f", root1, root2);
    }
    else if(discriminant < 0)
    {
        root1 = root2 = -b / (2 * a);
        img = sqrt(-discriminant) / (2 * a);
        printf("Two distinct complex roots exists: %f + i%f and %f - i%f",
                root1, img, root2, img);
    }
   return 0;
}
```

OUTPUT:

```
Enter values of a, b, c 2 6 1

Two distinct and real roots exists: -0.177124 and -
2.822876
```

QUESTION:-3

```
#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: 1998

1998 is not a Leap Year
```

QUESTION:-4

```
#include<stdio.h>
int main()
{
 int a,b,c,d;
 printf("enter two num");
 scanf("%d%d",&a,&b);
 c=100-a;
 d=100-b;
```

```
if (c>d)
  printf("%d is near",b);
else
  printf("%d is near",a);
return 0;
}
```

OUTPUT:

```
enter two num 50 60

60 is near
```

QUESTION:-5

```
#include<stdio.h>
int main()
{
        int a,b,c,largest,middle,smallest,dif1,dif2;
        printf("enter three numbers: ");
        scanf("%d%d%d",&a,&b,&c);
        if(a>=b && a>=c)
        {
                largest=a;
                if(b>c)
                {
                middle=b;
                smallest=c;
                }
```

```
        else
        {
                middle=c;
                smallest=b;
        }
}
if(b>=a && b>=c)
{
        largest=b;
        if(a>c)
        {
        middle=a;
        smallest=c;
        }
        else
        {
                middle=c;
                smallest=a;
        }
}
if(c>=b && c>=a)
{
        largest=c;
        if(a>b)
```

```
        {
            middle=a;
            smallest=b;
        }
        else
        {
            middle=b;
            smallest=a;
        }
    }
printf("largest no=%d middle no=%d smallest
number=%d\n",largest,middle,smallest);
    dif1=middle-smallest;
    dif2=largest-middle;
    if(dif1==dif2)
    {
        printf("true\n");
    }
    else{
        printf("false\n");
    }
    }
```

OUTPUT:

```
enter three numbers: 50 60 70
```

```
largest no=70 middle no=60 smallest number=50

true
```

QUESTION:-6

```
#include <stdio.h>
#include<string.h>
int main()
{
   int cid,units;
   float chrg,amt,netamt,surcharge=0;
   char cname;
printf("Enter customer ID");
scanf("%d",&cid);
printf("Enter the name of the customer");
scanf("%c",&cname);
printf("Enter the units consumed by the customer");
scanf("%d",&units);
if(units<200)
chrg=1.20;
else if(units>=200&&units<400)
chrg=1.50;
else if(units>=400&&units<600)
chrg=1.80;
else
```

```
chrg=2.00;
amt=units*chrg;
if(amt>400)
surcharge=amt*15/100.0;
netamt=amt+surcharge;
if(netamt<100)
netamt=100;
printf("\n Electricity Bill\n");
printf("customer ID:%d",cid);
printf("Customer name:%c",cname);
printf("units consumed:%d",units);
printf("Amounts charge @Rs2.00 per unit:2f",chrg,amt);
printf("Surcharge amount:2f",surcharge);
printf("Net amount paid by the customer:2f",netamt);
return o;
}
```

OUTPUT:

```
Enter the name of the customer:swagatika
        Eter the customer ID: 00546
        Enter the number of units:250

        CUSTOMER ID:546
        CUSTOMER NAME:Swagatika
        UNITS:250.00
```

AMOUNT:375

QUESTION:-7

```
#include <stdio.h>
int main()
{
   float x,y,z, average;
   printf("Enter marks secured in all 3 subject ");
   scanf("%f", &x,&y,&z);
   average = (x+ y + z)/3;
   if (average >= 90)
   {
      printf("Grade A");
   }
   else if (average >= 80)
   {
      printf("Grade B");
   }
   else if (average >= 70)
   {
      printf("Grade C");
   }
   else if (average >= 60)
```

```
    {
        printf("Grade D");
    }
    else
    {
        printf("Grade F");
    }
    return 0;
}
```

OUTPUT:

```
Enter marks secured in all 3 subject 50 50 50

Grade F
```

QUESTION:-8

```
#include <stdio.h>
int main()
{
    int month;
    printf("Enter month number(1-12): ");
    scanf("%d", &month);

    switch(month)
    {
        case 1:
            printf("31 days");
```

```
    break;
case 2:
    printf("28/29 days");
    break;
case 3:
    printf("31 days");
    break;
case 4:
    printf("30 days");
    break;
case 5:
    printf("31 days");
    break;
case 6:
    printf("30 days");
    break;
case 7:
    printf("31 days");
    break;
case 8:
    printf("31 days");
    break;
case 9:
    printf("30 days");
    break;
case 10:
    printf("31 days");
    break;
```

```
        case 11:
            printf("30 days");
            break;
        case 12:
            printf("31 days");
            break;
        default:
            printf("Invalid input!");
    }
    return 0;
}
```

OUTPUT:

```
Enter month number(1-
12): 10

31 days
```

QUESTION:-9

```
#include<stdio.h>
int main()
{
    int a=8, b=7, result;
    char operator;

    printf("Enter an operator: ");
    scanf("%c", &operator);

    switch(operator)
    {
```

```
        case '+':
            result = a + b;
            break;
        case '-':
            result = a - b;
            break;
        case '*':
            result = a * b;
            break;
        case '/':
            result = a / b;
            break;
    }
     printf("Result = %d", result);
    return 0;
}
```

OUTPUT:

Enter an operator: *

Result = 56

QUESTION:-10

```
#include<stdio.h>
void main()
{
    char Grade;
    printf("Enter the Grade");
```

```
   scanf("%c",& Grade);
   switch(Grade)
   {
      case 'A':
      printf("Excellent");
      break;
      case 'B':
      printf("Good");
      break;
      case 'C':
      printf("Average");
      break;
      case 'D':
      printf("Deficient");
      break;
      case 'F':
      printf("Failing");
      break;
      default:
      printf("INVALID");
        }
}
```

OUTPUT:

```
Enter the GradeA

Excellent
```

QUESTION:-11

```
#include<stdio.h>
void main()
{
int s1,s2,s3;
printf("Enter three sides of the triangle : ");
scanf("%d %d %d",&s1,&s2,&s3);
if(s1==s2){
    if(s2==s3){
    printf("It is an equilateral triangle.");
    }
    else{
    printf("It is an isoceles triangle.");
    }
}
else if(s3==s2){
 printf("It is an isoceles triangle.");
}
else if(s3==s1){
  printf("It is an isoceles triangle.");
}
else{
printf("It is a scalene triangle.");
}
}
```

OUTPUT:

Enter three sides of the triangle : 60 70 80

It is a scalene triangle.

QUESTION:-12

```
#include<stdio.h>
void main(){
int num;
printf("Enter a number : ");
scanf("%d",&num);
if(num%2==0){
printf("It is an even number.");
}
else{
printf("It is an odd number.");
}}
```

OUTPUT:

Enter a number : 6

It is an even number.

QUESTION:-13

```
#include<stdio.h>
void main()
{
char ch;
printf("Enter a character : ");
scanf("%c",&ch);
```

```
if((ch>=65 && ch<=90) || (ch>=97 && ch<=122)){
printf("It is an alphabet.");
}
else{
printf("It is not an alphabet");
}
}
```

OUTPUT:

Enter a character : g

It is an alphabet.

QUESTION:-14

```
#include<stdio.h>
void main(){
int a,b,c,largest;
printf("Enter three numbers : ");
scanf("%d %d %d",&a,&b,&c);
largest=a>b?(a>c?a:c):(b>c?b:c);
printf("%d is the largest.",largest);
}
```

OUTPUT:

Enter three numbers : 5 7 8

8 is the largest.

ASSIGNMENT:-5

QUESTION:1

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

```
void main()
{
   int  j, sum = 0;
   for (j = 1; j <= 10; j++)
   {
      sum = sum + j;
      printf("%d ",j);
   }
   printf("The Sum is : %d", sum);
}
```

OUTPUT:-

1 2 3 4 5 6 7 8 9 10

The Sum is : 55

QUESTION:-2

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

OUTPUT:-

Enter an integer: 2

* 1 = 2

2 * 2 = 4

2 * 3 = 6

2 * 4 = 8

2 * 5 = 10

2 * 6 = 12

2 * 7 = 14

2 * 8 = 16

2 * 9 = 18

2 * 10 = 20

QUESTION:-3

```
#include<stdio.h>
int main()
{
   int num,i=1, sum = 0;
   printf("Enter a number\n");
   scanf("%d", &num);
   do
   {
     sum = sum +2*i-1;
     i++;
    }
    while(i < num);
   printf("Sum of ODD integer number is %d\n", sum);
   return 0;
}
```

OUTPUT

Enter a number

4

Sum of ODD integer number is 9

QUESTION:-4

```
#include <stdio.h>
void main()
{
  int i,j;
  for(i=1;i<=5;i++)
  {
        for(j=1;j<=i;j++)
          printf("*");
        printf("\n");
  }
}
```

OUTPUT:

```
*
**
***
****
```

QUESTION:-5

```
#include <stdio.h>
void main()
{
  int i,j,k=1;
  for(i=1;i<5;i++)
```

```
  {
        for(j=1;j<=i;j++)
          printf("%d",k++);
        printf("\n");
  }
}
```

OUTPUT:

1

23

456

78910

QUESTION:-6

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

```
i++;
}while(i<5);
return 0;
}
```

OUTPUT:

QUESTION:-7

```
#include<stdio.h>
int main()
{
   int row,c=1,x,i,j;
   printf("Input number of rows: ");
   scanf("%d",&row);
   for(i=0;i<row;i++)
   {
      for(x=1;x<=row-i;x++)
      printf("  ");
      for(j=0;j<=i;j++)
      {
         if (j==0||i==0)
            c=1;
```

```
        else
          c=c*(i-j+1)/j;
        printf("% 4d",c);
      }
      printf("\n");
   }
}
```

OUTPUT:-

```
Input number of rows: 6
                1
              1   1
            1   2   1
          1   3   3   1
        1   4   6   4   1
```

QUESTION:-8

```
#include <stdio.h>
int main() {
   int i, n, x = 0, y = 1, nt;
   printf("Enter the num: ");
   scanf("%d", &n);
   printf("Fibonacci Series: ");

   for (i = 1; i <= n; ++i) {
      printf("%d, ", x);
      nt = x + y;
      x = y;
```

```
        y = nt;
    }
 return 0;
}
```

OUTPUT:

Enter the num: 8

Fibonacci Series: 0, 1, 1, 2, 3, 5, 8, 13,

QUESTION:-9

```
#include<stdio.h>
void main()
{
    int n, i=1, sum=0;
    printf("\n Enter a number: ");
    scanf("%d", &n);
    while(i<n)
    {
        if(n%i==0)
        {
            sum=sum+i;
        }
        i++;
    }
    if(sum==n)
        printf("\n %d is a Perfect Number.",n);
    else
        printf("\n %d is Not a Perfect Number.",n);
```

```
}
```

OUTPUT:

Enter a number: 4

4 is Not a Perfect Number.

QUESTION:-10

```
#include<stdio.h>
int main()
{
int num,originalNum, r, result = 0;
   printf("Enter a three digit integer: ");
   scanf("%d", &num);
   originalNum = num;
  while (originalNum != 0)
           {
      r = originalNum % 10;
            result=(result+(r * r * r));
      originalNum /= 10;
   }
if (result == num)
      printf("%d is an Armstrong number.", num);
   else
      printf("%d is not an Armstrong number.", num);

   return 0;
}
```

OUTPUT:

Enter a three digit integer: 345

345 is not an Armstrong number.

QUESTION:-11

```
#include <stdio.h>
int main() {
   int n, i, flag = 0;
   printf("Enter a num: ");
   scanf("%d", &n);
   for (i = 2; i <= n / 2; ++i)
   {
      if (n % i == 0) {
         flag = 1;
         break;
      }
   }
  if (n == 1) {
      printf("1 is neither prime nor composite.");
   }
   else {
      if (flag == 0)
         printf("%d is a prime number.", n);
      else
         printf("%d is not a prime number.", n);
   }
 return 0;
}
```

OUTPUT:

Enter a num: 8

8 is not a prime number.

QUESTION:-12

```
#include <stdio.h>


void main(){
   int num,r,sum=0,t;


   printf("Input a number: ");
   scanf("%d",&num);
   t=num;
  do{
       r=num % 10;
       sum=sum*10+r;
       num=num/10;
   }
       while(num!=0);
printf("reverse order : %d \n",sum);
}
```

OUTPUT:

Input a number: 67

reverse order : 76

QUESTION:-13

```
#include <stdio.h>
void main()
```

```
{   long int n,i,t=9;
        int sum =0;
        printf("enter the number or terms :");
        scanf("%ld",&n);
        for (i=1;i<=n;i++)
        { sum +=t;
          printf("%ld   ",t);
          t=t*10+9;
        }
        printf("\nThe sum of the series = %d \n",sum);
}
```

OUTPUT:

enter the number or terms :9

99 999 9999 99999 999999 9999999 99999999 999999999

The sum of the series = 1111111101

QUESTION:-14

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

float x,sum,t,d;
        int i=1,n;
        printf("Input the Value of x :");
        scanf("%f",&x);
        printf("Input the number of terms : ");
        scanf("%d",&n);
```

```
        sum =1; t = 1;
        while (i<n)
        {
          d = (2*i)*(2*i-1);
          t = -t*x*x/d;
          sum =sum+ t;
          i++;
        }
printf("\nthe sum = %f\nNumber of terms = %d\nvalue of x = %f\n",sum,n,x);
}
```

OUTPUT:

```
Input the Value of x :2
Input the number of terms : 4
the sum = -0.422222
Number of terms = 4
value of x = 2.000000
```

QUESTION:-15

```
#include <stdio.h>
#include <math.h>
int main()
{
        int x,sum,ctr;
        int i=1,n,m,mm,nn;
        printf("Input the value of x :");
        scanf("%d",&x);
```

```
        printf("Input number of terms : ");
        scanf("%d",&n);
        sum =x; m=-1;
        printf("The values of the series: \n");
        printf("%d\n",x);
  do
  {
     ctr = (2 * i + 1);
     mm = pow(x, ctr);
     nn = mm * m;
     printf("%d \n",nn);
     sum = sum + nn;
     m = m * (-1);
     i++;
        }while(i<n);
        printf("\nThe sum = %d\n",sum);
        return 0;
}
```

OUTPUT:

Input the value of x :2

Input number of terms : 3

The values of the series:

2

-8

32

The sum = 26

ASSIGNMENT:-6

QUESTION:-1

```
#include<stdio.h>
int main()
{
  int number, i, sum=0;
  for(i=0;i<=10;i++)
  {
    printf("Enter number: ");
    scanf("%d",&number);
    if ( number<0 )
     break;
    sum =sum+ number;
  }
  printf("Sum=%d",sum);
  return 0;
}
```

OUTPUT:-

```
Enter number: 456

Enter number: 4

Enter number: 6

Enter number: 6

Enter number: -
8

Sum=472
```

QUESTION:-2

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

```
{
  int number, i, sum=0;
  for(i=0;i<=10;i++)
  {
    printf("Enter number: ");
    scanf("%d",&number);
    if ( number<0 )
     continue;
    sum =sum+ number;
  }
  printf("Sum=%d",sum);
  return 0;
}
```

OUTPUT:

```
Enter number: 3

Enter number: 7

Enter number: -
7

Enter number: 88

Enter number: 4

Enter number: 9

Enter number: 34

Enter number: 7

Enter number: -3

Enter number: 9

Enter number: 09

Sum=170
```

QUESTION:-3

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

```
int main()
{
  int number, i;
  for(i=0;i <=1;i++)
  {
    printf("Enter a number: ");
     i--;
    scanf("%d",&number);
    if( number==0)
     break;
  }
  printf("you entered 0");
  return 0;
}
```

OUTPUT:

```
Enter a number: 7

Enter a number: 8

Enter a number: 0

you entered 0
```

QUESTION:-4

```
#include <stdio.h>
int main() {
    int n, i, flag = 0;
    printf("Enter a positive integer: ");
    scanf("%d", &n);
   for (i = 2; i <= n / 2; ++i)
{
       if (n % i == 0)
```

```
      {
         flag = 1;
         break;
      }
   }
  if (n == 1) {
      printf("1 is neither prime nor composite.");
   }
   else {
      if (flag == 0)
         printf("%d is a prime number.", n);
      else
         printf("%d is not a prime number.", n);
   }
 return 0;
}
```

OUTPUT:

```
Enter a positive integer: 18

18 is not a prime number.
```

QUESTION:-5

```
#include <stdio.h>
int main()
{
   int i, n, sum;
   for(i=1;i<=10; i=i+2)
   {
      sum =sum+ i;
      if(i>9)
      break;
```

```
    }
    printf("Sum of odd numbers = %d", sum);
    return 0;
}
```

OUTPUT:

Sum of odd numbers = 25

QUESTION:-6

```
#include <stdio.h>
int main() {
    int n, i, flag = 0;
    printf("Enter a positive integer: ");
    scanf("%d", &n);
 for (i = 2; i <= n / 2; ++i)
{
    if (n % i != 0)
     {
          flag = 1;
          continue;
       }
    }
   if (n == 1) {
       printf("1 is neither prime nor composite.");
    }
    else {
       if (flag == 0)
          printf("%d is a prime number.", n);
       else
          printf("%d is not a prime number.", n);
    }
```

```
  return 0;
}
```

OUTPUT:-

```
Enter a positive integer: 17

17 is not a prime number.
```

QUESTION:-7

```
#include <stdio.h>
int main()
{
   int i, n, sum;
   for(i=0;i<=100; i=i+2)
   {
      sum =sum+ i;
      if(i>99)
      break;
   }
   printf("Sum of even numbers = %d", sum);
   return 0;
}
```

OUTPUT:

```
Sum of even numbers = 2550
```

QUESTION:-8

```
#include <stdio.h>
int main()
{
 int i=1;
   lab:
         printf("%d ",i);
```

```
        i++;
        if(i<=10)
                goto lab;
        return 0;
}
```

OUTPUT:

```
1 2 3 4 5 6 7 8 9 10
```

QUESTION:-9

```
#include<stdio.h>
int main()
{
  int number, i, sum=0,j=1;
  float avg;
  for(i=0;i<=10;i=i+2)
  {
    printf("Enter number: ");
    scanf("%d",&number);
    j++;
    if ( number<0 )
     break;
    sum =sum+ number;
  }
  avg=sum/j;
  printf("Sum is=%d and averge is =%f",sum,avg);
  return 0;
}
```

OUTPUT:

```
Enter number: 8

Enter number: 9

Enter number: 18

Enter number: 6

Enter number: 0

Enter number: 56

Sum is=97 and averge is =13.000000
```

QUESTION:-10

```
#include <stdio.h>
void main()
{
   int num;
  printf("Enter a number\n");
   scanf("%d", &num);
  if (num % 2 == 0)
      goto even;
   else
      goto odd;
even:
   printf("%d is even\n", num);
   exit(0);
odd:
   printf("%d is odd\n", num);
}
```

OUTPUT:

Enter a number

88

88 is even

ASSIGNMENT:-7

QUESTION 1

```
#include <stdio.h>
void main()
{
  int i,n,a[100];
  printf("Input the number of elements to store in the array :");
  scanf("%d",&n);
  for(i=0;i<n;i++)
    {
          printf("%d place -  : ",i);
          scanf("%d",&a[i]);
          }
  printf("\nThe values store into the array are : \n");
  for(i=0;i<n;i++)
   {
           printf("% 2d",a[i]);
         }
  printf("\n\nThe values store into the array in reverse are :\n");
  for(i=n-1;i>=0;i--)
    {
           printf("% 2d",a[i]);
          }
  printf("\n\n");
}
```

OUTPUT:

```
Input the number of elements to store in the array :6
0 place -  : 1
1 place -  : 4
2 place -  : 3
```

```
3 place -  : 7

4 place -  : 5

5 place -  : 3


The values store into the array are :

 1  4  3  7  5  3


The values store into the array in reverse are :

 3  5  7  3  4  1
```

QUESTION 2

```
#include <stdio.h>
void main()
{
   int a[150];
   int i, n, sum=0;
    printf("Input the number of elements:");
    scanf("%d",&n);
      for(i=0;i<n;i++)
      {
               printf("%d place  : ",i);
               scanf("%d",&a[i]);
             }

   for(i=0; i<n; i++)
   {
      sum += a[i];
   }

   printf("Sum of all elements is : %d\n\n", sum);
}
```

OUTPUT:

```
Input the number of elements:6

0 place  : 2

1 place  : 4

2 place  : 6

3 place  : 8

4 place  : 3

5 place  : 7

Sum of all elements is : 30
```

QUESTION 3

```
#include <stdio.h>

void main()
{
   int arr1[100], arr2[100];
   int i, n;
  printf("\n\nCopy the elements one array into another array :\n");
     printf("Input the number of elements to be stored in the array :");
      scanf("%d",&n);
     printf("Input %d elements in the array :\n",n);
      for(i=0;i<n;i++)
      {
               printf("element - %d : ",i);
               scanf("%d",&arr1[i]);
             }

   for(i=0; i<n; i++)
   {
      arr2[i] = arr1[i];
   }
  printf("\nThe elements stored in the first array are :\n");
   for(i=0; i<n; i++)
```

```
  {
     printf("% 5d", arr1[i]);
  }

  printf("\n\nThe elements copied into the second array are :\n");
  for(i=0; i<n; i++)
  {
     printf("% 5d", arr2[i]);
  }
            printf("\n\n");
}
```

OUTPUT

```
Copy the elements one array into another array :

Input the number of elements to be stored in the array :4

Input 4 elements in the array :

element - 0 : 2

element - 1 : 4

element - 2 : 5

element - 3 : 7


The elements stored in the first array are :

    2    4    5    7


The elements copied into the second array are :

    2    4    5    7
```

QUESTION 4

```
#include <stdio.h>

int main()
```

```
{
   int arr[150];
   int i, j, size, count = 0;
   printf("Enter size of the array : ");
   scanf("%d", &size);
   printf("Enter elements in array : ");
   for(i=0; i<size; i++)
   {
      scanf("%d", &arr[i]);
   }

   for(i=0; i<size; i++)
   {
      for(j=i+1; j<size; j++)
      {
         if(arr[i] == arr[j])
         {
            count++;
            break;
         }
      }
   }

   printf("\nTotal number of duplicate elements found in array = %d", count);

   return 0;
```

OUTPUT

```
Enter size of the array : 6
Enter elements in array : 6 6 5 5 4 8


Total number of duplicate elements found in array = 2
```

QUESTION 5

```
#include <stdio.h>
int main()
{
   int a[1000],i,n,min,max;
   printf("Enter size of the array : ");
   scanf("%d",&n);
   printf("Enter elements in array : ");
   for(i=0; i<n; i++)
   {
      scanf("%d",&a[i]);
   }
  min=max=a[0];
   for(i=1; i<n; i++)
   {
       if(min>a[i])
                        min=a[i];
                         if(max<a[i])
                          max=a[i];
   }
    printf("minimum of array is : %d",min);
        printf("\nmaximum of array is : %d",max);
   return 0;
}
```

OUTPUT

```
Enter size of the array : 6
Enter elements in array : 1 2 3 4 5 6
minimum of array is : 1
maximum of array is : 6
```

QUESTION 6

```
#include <stdio.h>
void main()
 {
   int arr1[10], odd[10], even[10];
   int i,j=0,k=0,n;
     printf("Input the number of elements to be stored in the array :");
     scanf("%d",&n);
     for(i=0;i<n;i++)
         {
              printf(" %d place  : ",i);
              scanf("%d",&arr1[i]);
             }

   for(i=0;i<n;i++)
   {
          if (arr1[i]%2 == 0)
          {
            even[j] = arr1[i];
            j++;
          }
          else
          {
            odd[k] = arr1[i];
            k++;
          }
   }

   printf("\nThe Even elements are : \n");
   for(i=0;i<j;i++)
   {
          printf(" % 2d ",even[i]);
   }

   printf("\nThe Odd elements are :\n");
```

```
   for(i=0;i<k;i++)
   {
          printf("% 2d ", odd[i]);
   }
   printf("\n\n");
}
```

OUTPUT

```
Input the number of elements to be stored in the array :6
 0 place  : 1
 1 place  : 2
 2 place  : 3
 3 place  : 4
 4 place  : 5
 5 place  : 6

The Even elements are :
  2   4   6
The Odd elements are :
 1  3  5
```

QUESTION 7

```
#include <stdio.h>
void main()
{
  int arr1[100],i,n,p,x;
      printf("Input the size of array : ");
      scanf("%d", &n);
      for(i=0;i<n;i++)
     {
```

```
            printf("%d element  : ",i);
            scanf("%d",&arr1[i]);
          }


  printf("Input the value to be inserted : ");
  scanf("%d",&x);
  printf("Input the Position, where the value to be inserted :");
  scanf("%d",&p);

  printf("The curren array is :\n");
  for(i=0;i<n;i++)
    printf("% 5d",arr1[i]);

  for(i=n;i>=p;i--)
  {
    arr1[i]= arr1[i-1];
  }
    arr1[p-1]=x;
  printf("\n\nAfter Insert the element the new list is :\n");
  for(i=0;i<=n;i++)
    printf("% 5d",arr1[i]);
          printf("\n\n");
}
```

OUTPUT

```
Input the size of array : 4
0 element  : 8
1 element  : 9
2 element  : 4
3 element  : 1
Input the value to be inserted : 3
```

```
Input the Position, where the value to be inserted :2

The curren array is :

    8    9    4    1


After Insert the element the new list is :

    8    3    9    4    1
```

QUESTION 8

```
#include <stdio.h>
void main(){
 int arr1[50],i,pos,n;
     printf("\n\nDelete an element at desired position from an array :\n");
     printf("Input the size of array : ");
     scanf("%d", &n);

     printf("Input %d elements in the array in ascending order:\n",n);
     for(i=0;i<n;i++)
        {
             printf("element - %d : ",i);
             scanf("%d",&arr1[i]);
           }

 printf("\nInput the position where to delete: ");
 scanf("%d",&pos);

 i=0;
 while(i!=pos-1)
        i++;
         while(i<n){
        arr1[i]=arr1[i+1];
        i++;
 }
 n--;
```

```
   printf("\nThe new list is : ");
  for(i=0;i<n;i++)
      {
            printf("  %d",arr1[i]);
                  }
         printf("\n\n");

}
```

OUTPUT

```
Delete an element at desired position from an array :

Input the size of array : 4

Input 4 elements in the array in ascending order:

element - 0 : 1

element - 1 : 2

element - 2 : 3

element - 3 : 4


Input the position where to delete: 2


The new list is :   1  3  4
```

QUESTION 9

```
#include <stdio.h>
void main(){
  int arr1[50],n,i,j=0,fst,tnd;
      printf("Input the size of array : ");
      scanf("%d", &n);
      for(i=0;i<n;i++)
       {
```

```
                printf(" %d place : ",i);
                scanf("%d",&arr1[i]);
              }
 fst=0;
for(i=0;i<n;i++)
{
   if(fst<arr1[i])
           {
       fst=arr1[i];
       j = i;
   }
}
 tnd=0;
for(i=0;i<n;i++)
{
  if(i==j)
     {
       i++;
                       i--;
 }
    else
     {
       if(tnd<arr1[i])
              {
          tnd=arr1[i];
         }
     }
 }

 printf("The Second largest element in the array is :  %d \n\n", tnd);
}
```

OUTPUT

Input the size of array : 6

0 place : 1

1 place : 2

2 place : 3

3 place : 5

4 place : 6

5 place : 7

The Second largest element in the array is : 6

QUESTION 10

```
#include <stdio.h>

int getMedian(int ar1[], int ar2[], int n, int m)
{
   int i = 0;
   int j = 0;
   int count;
   int m1 = -1, m2 = -1;
   if((m + n) % 2 == 1) {
      for (count = 0; count <= (n + m)/2; count++) {
         if(i != n && j != m){
         m1 = (ar1[i] > ar2[j]) ? ar2[j++] : ar1[i++];
         }
         else if(i < n){
         m1 = ar1[i++];
         }
         else{
         m1 = ar2[j++];
         }
      }
      return m1;
   }
```

```
    else {
      for (count = 0; count <= (n + m)/2; count++) {
         m2 = m1;
         if(i != n && j != m){
         m1 = (ar1[i] > ar2[j]) ? ar2[j++] : ar1[i++];
         }
         else if(i < n){
         m1 = ar1[i++];
         }
         else{
         m1 = ar1[j++];
         }
      }
      return (m1 + m2)/2;
   }
}
 int main()
{
   int ar1[] = {4, 9, 16, 45};
   int ar2[] = {3, 8, 11, 20};

   int n1 = sizeof(ar1)/sizeof(ar1[0]);
   int n2 = sizeof(ar2)/sizeof(ar2[0]);
   printf("The median is:%d", getMedian(ar1, ar2, n1, n2));
   getchar();
   return 0;
}
```

OUTPUT

```
The median is:10
```

QUESTION 11

```
#include<stdio.h>
#include<stdlib.h>
int main(){
int a[3][3],b[3][3],mul[3][3],r,c,i,j,k;
system("cls");
printf("enter the number of row=");
scanf("%d",&r);
printf("enter the number of column=");
scanf("%d",&c);
printf("enter the first matrix element=\n");
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
scanf("%d",&a[i][j]);
}
}
printf("enter the second matrix element=\n");
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
scanf("%d",&b[i][j]);
}
}

printf("multiply of the matrix=\n");
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
mul[i][j]=0;
```

```
for(k=0;k<c;k++)
{
mul[i][j]+=a[i][k]*b[k][j];
}
}
}
//for printing result
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
printf("%d\t",mul[i][j]);
}
printf("\n");
}
return 0;
}
```

OUTPUT

```
enter the number of row=3
enter the number of column=3
enter the first matrix element=
3 4 5 6 7 3 1 5 7
enter the second matrix element=
5 7 2 0 8 4 2 1 6
multiply of the matrix=
25      58      52
36      101     58
19      54      64
```

QUESTION 12

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

```
int main() {
   int a[3][3], transpose[3][3], r, c, i, j;
   printf("Enter rows and columns: ");
   scanf("%d %d", &r, &c);

   printf("\nEnter matrix elements:\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");
      }
   for (i = 0; i < r; ++i)
      for (j = 0; j < c; ++j) {
         transpose[j][i] = a[i][j];
      }

   printf("\nTranspose of the 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");
      }
   return 0;
}
```

OUTPUT

```
Enter rows and columns: 3 3



Enter matrix elements:

Enter element a11: 4 5 6 7 8 9 1 2 3

Enter element a12: Enter element a13: Enter element a21: Enter element
a22: Enter element a23: Enter element a31: Enter elemen
t a32: Enter element a33:

Entered matrix:

4  5  6

7  8  9

1  2  3



Transpose of the matrix:

4  7  1

5  8  2

6  9  3
```

QUESTION 13

```
#include <stdio.h>
void main()


  {
    int i,j,arr1[50][50],sum=0,n,m=0;


            printf("Input the size of the square matrix : ");
    scanf("%d", &n);
       m=n;
            printf("Input elements in the first matrix :\n");
     for(i=0;i<n;i++)
     {
        for(j=0;j<n;j++)
```

```
        {
                printf("element - [%d],[%d] : ",i,j);
                scanf("%d",&arr1[i][j]);
        }
      }
          printf("The matrix is :\n");
          for(i=0;i<n;i++)
          {
            for(j=0;j<n ;j++)
              printf("% 4d",arr1[i][j]);
             printf("\n");
          }
for(i=0;i<n;i++)
          {
        m=m-1;
            for(j=0;j<n ;j++)
        {
          if (j==m)
          {
            sum= sum+arr1[i][j];
          }

        }
          }
     printf("Addition of the  left Diagonal elements is :%d\n",sum);
  }
```

OUTPUT

```
Input the size of the square matrix : 4 4

Input elements in the first matrix :

element - [0],[0] : element - [0],[1] : 1 2

element - [0],[2] : element - [0],[3] : 2 3
```

```
element - [1],[0] : element - [1],[1] : 3 4

element - [1],[2] : element - [1],[3] : 4 5

element - [2],[0] : element - [2],[1] : 5 6

element - [2],[2] : element - [2],[3] : 3 5

element - [3],[0] : element - [3],[1] : 2 4

element - [3],[2] : element - [3],[3] : 6 8

The matrix is :

   4   1   2   2

   3   3   4   4

   5   5   6   3

   5   2   4   6

Addition of the  left Diagonal elements is :16
```

QUESTION 14

```
#include <stdio.h>


int main (void)
{
        int a[3][3];
        int i = 0, j = 0, row = 0, col = 0;

        printf ("Enter the order of the matrix (mxn): ");
        scanf ("%d %d", &row, &col);

        int flag = 0;

        printf ("Enter the elements of the matrix\n");
        for (i = 0; i < row; i++)
        {
                for (j = 0; j < col; j++)
                {
```

```
                scanf ("%d", &a[i][j]);
            }
        }

        for (i = 0; i < row; i++)
        {
            for (j = 0; j < col; j++)
            {
                if (i == j && a[i][j] != 1)
                {
                    flag = -1;
                    break;
                }
                else if (i != j && a[i][j] != 0)
                {
                    flag = -1;
                    break;
                }
            }
        }

        if (flag == 0)
        {
            printf ("It is a IDENTITY MATRIX\n");
        }
        else
        {
            printf ("It is NOT an identity matrix\n");
        }

        return 0;
}
```

OUTPUT

```
Enter the order of the matrix (mxn): 4 4

Enter the elements of the matrix

2 4 5 6 1 2 3 4  5 6 7 8 9 0 1 2

It is NOT an identity matrix
```

QUESTION 15

```
#include<stdio.h>
void main(){
int mat[5][5]={{10,20,30,40,50},
            {11,22,33,44,55},
            {12,23,34,45,56},
            {13,24,35,46,57},
            {14,25,36,47,58}};
int x,y=0,i,j;
printf("The matrix is : \n");
for(i=0;i<5;i++){
for(j=0;j<5;j++){
printf("%d\t",mat[i][j]);
}
printf("\n");
}
printf("Enter the element to be searched : ");
scanf("%d",&x);
for(i=0;i<5;i++){
   for(j=0;j<5;j++){
      if(x==mat[i][j]){
         printf("%d is found at position [%d][%d]\n",x,i,j);
      }
   }
```

```
}
if(y==0){
   printf("%d is not found in the matrix",x);
}
}
```

OUTPUT

```
The matrix is :
10      20      30      40      50
11      22      33      44      55
12      23      34      45      56
13      24      35      46      57
14      25      36      47      58
Enter the element to be searched : 45
45 is found at position [2][3]
45 is not found in the matrix
```

ASSIGNMENT:-8

QUESTION-1

```
#include  <stdio.h>
  int main( )
  {
     char  wd[100], chtr;
     int   i=0;
     printf("enter text \n");
     while(chtr != '\n')
```

```
    {
       chtr = getchar();
       wd[i]   = chtr;
       i++;
    }
    printf("\n%s\n", wd);
 }
```

QUESTION-2

PROGRAM:

```
#include  <stdio.h>
  int main( )
  {
     char  wd[100], chtr;
     int   i=0;
     char st[50];
     printf("enter text \n");
     fgets(st, 50 , stdin);
     puts( st);
  }
```

OUTPUT:-

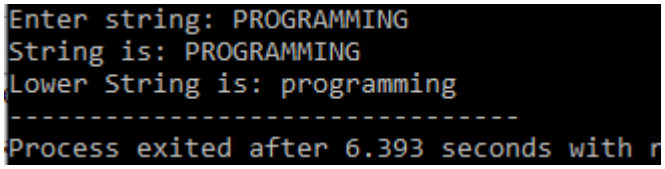
```
enter text
RAM IS A GOOD BOY

RAM IS A GOOD BOY
```

3.(A)

```
#include<stdio.h>
#include <string.h>
int main(){
char str[20];
printf("Enter string: ");
```

```
gets(str);

printf("String is: %s",str);

printf("\nLower String is: %s",strlwr(str));

return 0;

}
```

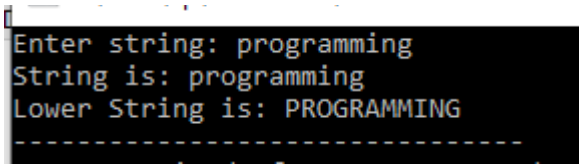
OUTPUT:-



(B).

```
#include<stdio.h>

#include <string.h>

int main(){

char str[20];

printf("Enter string: ");

gets(str);

printf("String is: %s",str);

printf("\nLower String is: %s",strupr(str));

return 0;

}
```

OUTPUT:-

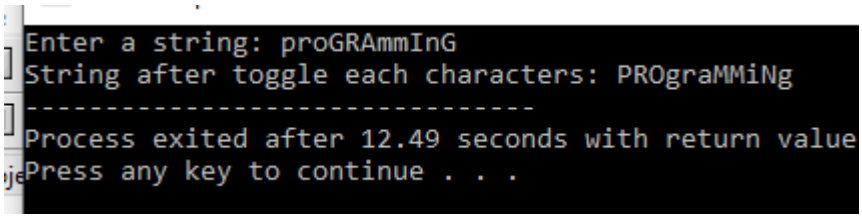


(C).

```
#include <stdio.h>

 int main()

{
```

```
    char    str[100];
    int     counter;
    printf("Enter a string: ");
    gets(str);
   for(counter=0;str[counter]!=NULL;counter++)
    {
       if(str[counter]>='A' && str[counter]<='Z')
          str[counter]=str[counter]+32;
       else if(str[counter]>='a' && str[counter]<='z')
          str[counter]=str[counter]-32;
    }
   printf("String after toggle each characters: %s",str);
    return 0;
}
```

OUTPUT:-



(D).

PROGRAM:-

```
#include<stdio.h>
int main()
{
char s[100];int i=0;
printf("Enter a sentence :\n");
gets(s);
for(i=0;s[i]!='.' && i<100;i++)
{
   if(i==0){
```

```
        if(s[i]>=97&&s[i]<=122){
            s[i]-=32;
        }
    }
    else{
        if(s[i]>=65&&s[i]<=90)
                    {
            s[i]+=32;
        }
    }
}
printf("\n%s",s);
return 0;
}
```

OUTPUT:-

```
Enter a sentence :
ram is a boy

Ram is a boy
------------------------
```

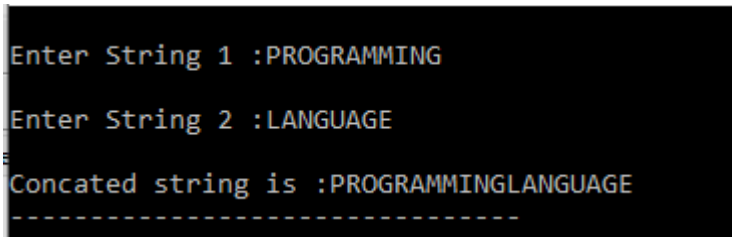
4. Without String Handling Functions

PROGRAM:-

```
#include<stdio.h>
#include<string.h>
void concat(char[], char[]);
int main() {
        char s1[50], s2[30];
        printf("\nEnter String 1 :");
        gets(s1);
        printf("\nEnter String 2 :");
        gets(s2);
```

```
        concat(s1, s2);
        printf("\nConcated string is :%s", s1);
        return (0);
}
void concat(char s1[], char s2[]) {
        int i, j;
        i = strlen(s1);
        for (j = 0; s2[j] != '\0'; i++, j++) {
                s1[i] = s2[j];
        }
        s1[i] = '\0';
}
```

OUTPUT:-



With String Handling Functions

PROGRAM:-

```
 #include<stdio.h>
#include <string.h>
int main(){
char ch[10]={'P','R','O','G','R','A',’M’,’I’, ‘N’,’G’,'\0'};
char ch2[10]={'L','A','N','G','U','A','G','E', '\0'};
strcat(ch,ch2);
printf("Value of first string is: %s",ch);
return 0;
}
```

OUTPUT:-

```
Enter String 1 :PROGRAMMING

Enter String 2 :LANGUAGE

Concated string is :PROGRAMMINGLANGUAGE
--------------------------------
```

5. With String Handling Functions

PROGRAM:-

```
 #include<stdio.h>

#include <string.h>

int main(){

char str[20];

printf("Enter string: ");

printf("String is: %s",str);

printf("\nReverse String is: %s",strrev(str));

return 0;

}
```

OUTPUT:-

```
Enter string: PROGRAMMING
String is: PROGRAMMING
Reverse String is: GNIMMARGORP
--------------------------------
```

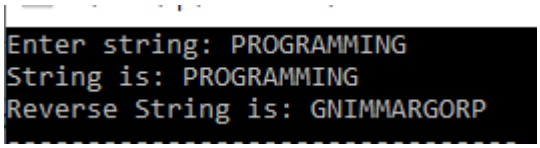
Without String Handling Functions

PROGRAM:-

```
 #include <stdio.h>

int main()

{

  char s[1000], r[1000];

  int begin, end, count = 0;


  printf("Input a string\n");

  gets(s);
```

```
  while (s[count] != '\0')
    count++;

  end = count - 1;

  for (begin = 0; begin < count; begin++) {
    r[begin] = s[end];
    end--;
  }

  r[begin] = '\0';

  printf("%s\n", r);

  return 0;
}
```

OUTPUT:-



QUESTION-6

Without String Handling Functions

PROGRAM:-

```
#include <stdio.h>

int main()

{

  char str1[100], str2[100];

  int m,n, i = 0;

     printf("Input the string : ");

     fgets(str1, 100, stdin);
```

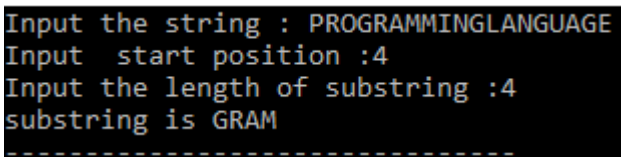
```
  printf("Input  start position :");
  scanf("%d", &m);

  printf("Input the length of substring :");
  scanf("%d", &n);

  while (i < n)
  {
    str2[i] = str1[m+i-1];
    i++;
  }
  str2[i] = '\0';
  printf("substring is %s", str2);
}
```

With String Handling Functions

```
#include <stdio.h>
void main()
{
charstr[100], sstr[100];
intpos, l, c = 0;

printf("\n\nExtract a substring from a given string:\n");

printf("Input the string : ");
fgets(str, sizeofstr, stdin);

printf("Input the position to start extraction :");
scanf("%d", &pos);

printf("Input the length of substring :");
scanf("%d", &l);
```

```
while (c < l)
  {
sstr[c] = str[pos+c-1];
c++;
  }
sstr[c] = '\0';

printf("The substring retrieve from the string is : %s", sstr);

}
```

OUTPUT:-

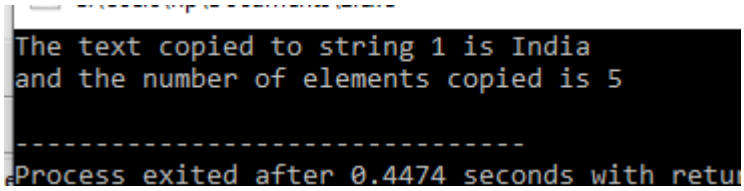


Q7. With String Handling Functions

PROGRAM:-

```
#include<stdio.h>
#include<string.h>
int main(){
char str1[10]="Hello",str2[10]="India",j;
strcpy(str1,str2);
j=strlen(str1);
printf("The text copied to string 1 is %s \nand the number of elements copied is %d\n",str1,j);
}
```

OUTPUT:-



Without String Handling Functions

PROGRAM:-

```
#include <stdio.h>
int copy_string(char *target, char *source)
{
int len=0;
        while(source[len] != '\0')
        {
                target[len] = source [len];
                len++;
        }
        target[len] = '\0';
        return len;
}
int main()
{ char str1[]="programming language";

        char str2[30];
        int count;
count = copy_string(str2,str1);
        printf("Source string (str1): %s\n",str1);
        printf("Target string (str2): %s\n",str2);
        printf("Copied characters are: %d\n",count);

        return 0;
}
```

OUTPUT:-

QUESTION:8

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

```
int main()
{
   char s[1000];
   int i,n,c=0;
   printf("Enter  the string : ");
   gets(s);
   n=strlen(s);
   for(i=0;i<n/2;i++)
   {
         if(s[i]==s[n-i-1])
         c++;

         }
         if(c==i)
            printf("string is palindrome");
   else
      printf("string is not palindrome");
   return 0;
}
```

OUTPUT:

```
Enter  the string : mom

string is palindrome
```

QUESTION:9

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

```
char s[1000],wrd[1000];
int n,a[1000],i,j,k=0,l,found=0,t=0;
printf("Enter  the string : ");
gets(s);
printf("Enter word to be searched: ");
gets(wrd);
for(i=0;s[i];i++)
{
	if(s[i]==' ')
	{
		a[k++]=i;
		}
	}
	a[k++]=i;
	j=0;
	for(i=0;i<k;i++)
	{
		n=a[i]-j;
		if(n==strlen(wrd))
		{
			t=0;
			for(l=0;wrd[l];l++)
			{
			if(s[l+j]==wrd[l])
				{
					t++;
				}
			}
			if(t==strlen(wrd))
```

```
                {
                        found++;
                }
              }
              j=a[i]+1;
        }
         printf("word '%s' is occurred count=%d ",wrd,found);

}
```

OUTPUT:

```
Enter  the string : Ram is a boy
Enter word to be searched: boy
word 'boy' is occurred count=1
```

QUESTION:10

```
#include<stdio.h>
#include <stdlib.h>
#include <string.h>
int main()
{
  char ch, input[100], output[100];
  int no[26] = {0}, n, c, t, x;
  printf("Enter some word\n");
  scanf("%s", input);
  n = strlen(input);
  for (c = 0; c < n; c++)
  {
    ch = input[c] - 'a';
```

```
    no[ch]++;
  }
  t = 0;
  for (ch = 'a'; ch <= 'z'; ch++)
  {
    x = ch - 'a';
    for (c = 0; c < no[x]; c++)
    {
      output[t] = ch;
      t++;
    }
  }
  output[t] = '\0';
  printf("%s\n", output);
  return 0;
}
```

OUTPUT:

```
Enter some word

programming

aggimmnoprr
```

QUESTION:11

```
#include <stdio.h>
#include <string.h>
char str[100];
void main()
{
    int i, t, j, len;
```

```
    printf("Enter a string : ");
    scanf("%[^\n]s", str);
    len = strlen(str);
    str[len] = ' ';
    for (t = 0, i = 0; i < strlen(str); i++)
    {
        if ((str[i] == ' ') && (str[i - 1] == 's'))
        {
            for (j = t; j < i; j++)
                printf("%c", str[j]);
            t = i + 1;
            printf("\n");
        }
        else
        {
            if (str[i] == ' ')
            {
                t = i + 1;
            }
        }
    }
}
```

OUTPUT:

```
Enter a string : welcome to class

class
```

QUESTION:12

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

```
int main() {
    char string[256], text[256], words[100][256];
    int i, j, k, n;
    i = j = k = n = 0;
    printf("Enter your input string:");
    fgets(string, 256, stdin);
    string[strlen(string) - 1] = '\0';
    while (string[i] != '\0') {
        if (string[i] == ' ') {
            words[j][k] = '\0';
            k = 0;
            j++;
        } else {
            words[j][k++] = string[i];
        }
        i++;
    }

    words[j][k] = '\0';
    n = j;
    for (i = 0; i < n; i++) {
        for (j = i + 1; j <= n; j++) {
            if (strcmp(words[i], words[j]) == 0) {
                for (k = j; k < n; k++) {
                    strcpy(words[k], words[k + 1]);
                }
                n--, j--;
            }
        }
    }
    for (i = 0; i <= n; i++) {
```

```
            printf("%s ", words[i]);
        }
        printf("\n");
        return 0;
    }
```

OUTPUT:

```
Enter your input string:Ram goes to the to school everyday

Ram goes to the school everyday
```