

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.