Assignment- 3

Decision Control Statements

1. **Wap to check whether a given number is positive or non-positive .**

→

```
#include<stdio.h>
int main()
{
    int a ;
    printf("enter a number ");
    scanf("%d",&a);
    if(a>0)
        printf("%d is positive number ",a);
    else
        printf("%d is non positive number ",a);
    return 0;
}
```

2. **Wap to check whether a given number is divisible by 5 or not .**

→

```
#include<stdio.h>
int main()
{
    int a ;
    printf("enter a nmber ");
     scanf("%d",&a);
    if(a%5==0)
        printf("%d is divisible by 5",a);
    else
```

```
        printf("%d is not divisible by 5",a);
    return 0 ;
}
```

3. Wap to check whether a given number is an even number or an odd number .

→

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

4. Wap to check whether a given number is an even number or an odd number without using % operator.

→

```
#include<stdio.h>
int main()
{
    int  num ;
    printf("enter a number ");
    scanf("%d",&num);
    if ((num&1)==0)
```

```
        printf("%d is an even number ",num);
    else
        printf("%d is an odd number ",num);
    return 0;
}
```

5. **Wap to print greater between two numbers . print one number of both are the same.**

→

```
#include<stdio.h>
int main()
{
    int a , b ;
    printf("enter a number ");
    scanf("%d %d",&a,&b);
    if(a>b)
    {
        printf("%d is greater ",a);
    }
    else
    {
        printf("%d is greater ",b);
    }
    return 0;
}
```

6. **Wap to check whether roots of a given quadratic equation are real & distinct , real & equal or imaginary roots.**

→

```
#include<stdio.h>
int main()
{
    int a,b,c ;
    printf("enter the value of a,b and c\n");
    scanf("%d%d%d",&a,&b,&c);
    int disc=b*b-4*a*c ;
    if(disc>0)
        printf("real and distinct");
    else
    if(disc<0)
        printf("imaginary");
    else
        printf("real and equal");
    return 0;
}
```

7. Wap to check whether a given year is a leap year or not .

→

```
#include<stdio.h>
int main()
{
    int year ;
    printf("enter the year ");
    scanf("%d",&year);
    if(year%100==0)
    {
        if(year%400==0)
```

```
                printf("leap year");
        else
                printf("not leap year");
    }
    else
    {
    if(year%4==0)
                printf("leap year");
    else
                printf("not leap year");
    }
    return 0;
}
```

8. Wap to find the greatest among three given numbers . Print number once if the greatest number appears two or three times .

→

```
#include<stdio.h>
int main()
{
    int a,b,c ;
    printf("enter three numbers");
    scanf("%d%d%d",&a,&b,&c);
    if(a>b)
    {
        if(a>c)
            printf("%d is greater ",a);
    else
```

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

9. Wap to which takes the cost price and selling of a product from the user . Now calculate and print profit or loss percentage.

→

```
#include<stdio.h>
int main()
{
    float cp , sp , profit_per , loss_per ;
    printf("enter the cost price of a product ");
    scanf("%f",&cp);
    printf("enter the selling price of a product ");
    scanf("%f",&sp);
    f(sp>cp)
    {
        profit_per = (sp - cp / cp)*100 ;
        printf("profit_per=%f",profit_per);
    }
```

```
        else
        {
            loss_per = (cp - sp / cp)*100 ;
            printf("loss_per =%f",loss_per);
        }
        return 0;
    }
```

10. Wap to take marks of 5 subjects from the user . Assume marks are given out of 100 and passing marks is 33 . now display whether the candidate passed the examination or failed.

→

```
#include<stdio.h>
int main()
{
    int hindi , eng , maths , comp , sci ;
    printf("enter the marks of 5 subjects");
    scanf("%d%d%d%d%d",&hindi,&eng,&maths,&comp,&sci);
    if(hindi>=33 && eng>=33 && maths>=33 && comp>=33 && sci>=33)
        printf("pass");
    else
        printf("fail");
    return 0 ;
}
```

11. Wap to check whether a given alphabet is in uppercase or lowercase .

→

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

```
        int ch ;
        printf("enter a character ");
        scanf("%c",&ch);
        if(ch>='65' && ch<='90')
            printf("%c is an upper case",ch);
        else
            printf("%c is an lower case",ch);
        return 0;
    }
```

12. Wap to check whether a given number is divisible by 3 and divisible by 2.

→

```
#include<stdio.h>
int main()
{
    int a ;
    printf("enter a number ");
    scanf("%d",&a);
    if(a%3==0)
        printf("%d is divisible by 3",a);
else
if(a%2==0)
    printf("%d is divisible by 2",a);
else
   printf("%d is not divisible by 3 and 2",a );
return 0;
}
```

13. **Wap to check whether a given number is divisible by 7 or divisible *by 3.***

→

```
#include<stdio.h>
int main()
{
    int a ;
    printf("enter a number ");
    scanf("%d",&a);
    if(a%7==0)
        printf("%d is divisible by 7",a);
    else
    if(a%3==0)
        printf("%d is divisible by 3",a);
    else
        printf("%d is not divisible by 7 and 3",a );
    return 0;
}
```

14. Wap to check whether a given numbrer is positive , negative or zero .

→

```
#include<stdio.h>
int main()
{
    int a ;
    printf("enter a number ");
    scanf("%d",&a);
    if(a>0)
        printf("%d is positive number ",a);
    else
    if(a<0)
```

```
        printf("%d is negative number ",a);
    else
    if(a==0)
        printf("%d is zero ",a);
    return 0 ;
}
```

15. Wap to check whether a given character is an (upper case) , an alphabet (lower case) , a digit or a special character.

→

```
#include<stdio.h>
int main()
{
     int ch ;
    printf("enter a character ");
    scanf("%c",&ch);
    if(ch>='A' && ch<='Z')
        printf("%c is an upper case ",ch);
    else
    if(ch>='a' && ch<='z')
        printf("%c is an lower case ",ch);
    else
    if(ch>='0' && ch<='9')
        printf("%d is a digit ",ch);
    else
        printf("special characters");
    return 0;
}
```

16. Wap to check whether a given character is an (upper case) , an alphabet (lower case) , a digit or a special character.

→

```
#include<stdio.h>
int main()
{
    int ch ;
    printf("enter a character ");
    scanf("%c",&ch);
    if(ch>='A' && ch<='Z')
        printf("%c is an upper case ",ch);
    else
    if(ch>='a' && ch<='z')
        printf("%c is an lower case ",ch);
    else
    if(ch>='0' && ch<='9')
        printf("%d is a digit ",ch);
    else
        printf("special characters");
    return 0;
}
```