ASSIGNMENT 8

1. Write a program to check whether a given number is divisible by 3 and divisible by 2.

ANS:-

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int num;
    printf("Enter a number :");
    scanf("%d",&num);
     if(num%2==0&&NUM%2==0)
       {
           printf("%d is divisible by 2 and 3\n",num);

       }
        else if(num%2==0)
          printf("%d is  divisible by 2 but not divisble by 3\n",num);
              else if(num%3==0)
                printf("%d is divisible by 3 but not divisible by 2\n",num);
     else
       {
           printf("%d is not divisible by 2 and 3",num);
       }
    getch();
    return 0;
}
```

2. Write a program to check whether a given number is divisible by 7 or divisible by 3.

ANS:-

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int num;
     printf("Enter  number: ");
     scanf("%d",&num);
      if(num%3==0)
      printf("%d is divisible by 3\n",num);
       else if(num%7==0)
        printf("%d is divisible by 7\n",num);
      else
      printf("%d is not divisible by 3 and 7\n");
      getch();
      return 0;
}
```

3. Write a program to check whether a given number is positive, negative or zero.

ANS:-

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int num;
     printf("Enter  number: ");
     scanf("%d",&num);
      if(num>0)
      printf("%d is positive\n",num);
       else if(num<0)
        printf("%d is negative\n",num);
      else
      printf("Entered number is 0;");
      getch();
      return 0;
}
```

4. Write a program to check whether a given year is leap year or not.

ANS:-

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int num;
    printf("Enter year :");
    scanf("%d",&num);
     if(num%4==0)
       printf("Leapyear\n");

     else
      printf("Not Leapyear");

    getch();
    return 0;
}
```

5. Write a program to find greatest among three numbers. If two or three numbers are identical and greatest among all then print it only once.

ANS:-

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int num1,num2,num3;
     printf("Enter three numbers: ");
     scanf("%d%d%d",&num1,&num2,&num3);
      if(num1>=num2&&num1>=num3)
       printf("%d is the greatest number\n",num1);
        else if(num2>=num1&&num2>=num3)
         printf("%d is the greatest number\n",num2);
          else
            printf("%d is the greatest number\n",num3);
      getch();
      return 0;
}
```

6. Write a program to check whether a given character is an alphabet(uppercase), an alphabet(lowercase), a digit or a special character.

ANS:-

```
#include<stdio.h>
#include<conio.h>
int main()
{
    char num;
     printf("Enter : ");
     scanf("%c",&num);
      if((num>='A'&&num<='Z'))
      printf("%c is an alphabet  in uppercase\n",num);
      if((num>='a'&&num<='z'))
      printf("%c is an alphabet  in Lowercase\n",num);
       else if(num<='9'&&num>='0')
        printf("%c is a digit\n",num);
      else
      printf("input is a special character");
      getch();
      return 0;
}
```

7. Write a program which takes the length of the sides of a triangle as an input. Display whether the triangle is valid or not.

ANS:-

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

```
#include<conio.h>
int main()
{
    int num1,num2,num3;
     printf("Enter sides of triangle: ");
     scanf("%d%d%d",&num1,&num2,&num3);
     if(num3>=num1&&num3>=num2)
     {
      if(num1+num2>num3)
       printf("Triangle is valid\n");
       else
            printf("Triangle is not valid\n");
     }
       else if(num2>=num1&&num2>=num3)
       {
         if(num1+num3>num2)
         printf("Triangle is valid\n");
         else
            printf("Triangle is not valid\n");
       }
        else if(num1>=num2&&num1>=num3)
        {
          if(num3+num2>num1)
         printf("Triangle is valid\n");
         else
            printf("Triangle is not valid\n");
        }



      getch();
      return 0;
}
```

8. Write a program which takes the month number as an input and display number of days in that month.

ANS:-

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

```
    scanf("%d",&month);
     if(num%4==0)
       {
           if(month==1||month==3||month==5||month==7||month==9||month==11)
             printf("31 Days\n");

            else if(month==4||month==6||month==8|| month==10||month==12)
             printf("30 Days\n");
            else
               printf("29 Days");

       }
       else
         {
           if(month==1||month==3||month==5||month==7||month==9||month==11)
             printf("31 Days\n");

            else if(month==4||month==6||month==8|| month==10||month==12)
             printf("30 Days\n");
            else
               printf("28 Days");

       }
     getch();
     return 0;
}
```

9. Write a program to find the nature of roots of a quadratic equation.

ANS:-

```
#include<stdio.h>
#include<conio.h>
#include<math.h>
int main()
{
    int a,b,c,D,root1,root2;
     printf("Enter cofficient of x^2: ");
     scanf("%d",&a);
     printf("Enter cofficient of x: ");
     scanf("%d",&b);
     printf("Enter constant term: ");
     scanf("%d",&c);
     D=(b*b)-(4*a*c);
     root1=(-b+sqrt(D))/2*a;
     root2=(-b-sqrt(D))/2*a;
     if(D>0)
     {
```

```
      printf("Roots are real\n");
      printf("Root1=%d and root2=%d\n",root1,root2);


    }
      else if(D==0)
      {
          printf("Roots are equal\n");
          int root=-b/2*a;
          printf("root is %d",root);
      }
       else

        printf("Roots are imagenary");




     getch();
     return 0;
}
```

10. Write a C program to input marks of five subjects Physics, Chemistry, Biology, Mathematics, Computer. Calculate percentage and grade according to following:
    - Percentage>=90% : Grade A
    - Percentage>=80% : Grade B
    - Percentage>=70% : Grade C
    - Percentage>=60% : Grade D
    - Percentage>=40% : Grade E
    - Percentage<40% : Grade F

ANS:-

```
#include<stdio.h>
#include<conio.h>
#include<math.h>
int main()
{
    int a,b,c,d,e;
    float Total;
     printf("Enter marks of Physics: ");
     scanf("%d",&a);
     printf("Enter marks of Chemistry: ");
     scanf("%d",&b);
```

```
    printf("Enter marks of Biology: ");
    scanf("%d",&c);
    printf("Enter marks of Mathematics: ");
    scanf("%d",&d);
    printf("Enter marks of Computer: ");
    scanf("%d",&e);
    Total=(a+b+c+d+e)/5.0;

    if(Total>=90)
    {

      printf("you got %f%% A grade\n",Total);


    }
    else if(Total>=80&&Total<90)
    {

      printf("you got %f%% B grade\n",Total);


    }
     else if(Total>=70&&Total<80)
    {

      printf("you got %f%% C grade\n",Total);


    }
    else if(Total>=60&&Total<70)
    {

      printf("you got %f%% D grade\n",Total);


    }
    else if(Total>=40&&Total<60)
    {

      printf("you got %f%% E grade\n",Total);


    }

    else
    {

      printf("you got %f%% F grade\n",Total);
```

```
    }
     getch();
     return 0;
}
```