Assignment - 9

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

Ans:

```
#include<stdlib.h>
#include<stdio.h>
int main()
{ int n;
printf("Enter month no.");
scanf("%d", &n);
switch(n)
{ case 1: printf("31 days");
          break;
case 2: printf("28 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: exit(0);

}
return 0;
}
```

② write a menu driven program with the following options:

(a) Addition
(b) subtraction
(c) multiplication
(d) division
(e) Exit.

Ans:

```
#include<stdio.h>
#include<stdlib.h>
int main()
{
int n,a,b;
while(1)
{
printf("1. Addition \n 2. subtraction \n
3. multiplication \n 4. division \n
5. Exit");

printf("Enter your choice");
scanf("%d",&n);

switch(n)

{
case 1: printf("Enter a and b value")
scanf("%d %d",&a,&b);
printf("%d",a+b);
break;
```

```
case 2: printf("enter a and b values");
        scanf("%d%d", &a, &b);
        printf("%d", a-b);
          break;

case 3: printf("enter a and b values");
        scanf("%d%d", &a, &b);
        printf("%d", a*b);
          break;

case 4: printf("enter a and b values");
        scanf("%d%d", &a, &b);
        printf("%d", a/b);

          break;

case 5: exit(0)

  }
}
 return 0;

}
```

⑤ Write a program which takes the day number of a week and displays a unique greeting message for the day.

Ans →

```
# include <stdio.h>
# include <stdlib.h>
  int main()
{ int n;
printf ("Enter the day no. of week");
scanf ("%d", &n);
switch (n)
{ case 1: printf ("Monday");
          break;
  case 2: printf ("Tuesday");
          break;
  case 3: printf ("Wednesday");
          break;
  case 4: printf ("Thursday");
          break;
  case 5: printf ("Friday");
          break;
```

```
case 6: printf("saturday");
        break;
case 7: printf("sunday");
        break;
default: exit(0);
}
return 0;
}
```

(4) write a menu driven program with the following options:

(a) check whether a given set of three number are length of an isosceles triangle or not.

(b) check whether a given set of three number are lengths of sides of a right angled triangle or not.

(c) check whether a given set of three numbers are equilateral triangle or not.

(d) Exit.

```
#include<stdio.h>
#include<stdlib.h>
int main()
{ int choice; int a, b, c;
while(1)
{ printf("1. check given set of three length
        are length of isosceles triangle\n");
printf("2. check given set of three no
        are length of side of a right angle
        triangle\n");
printf("3. check whether given set of three
        no are equilateral triangle");

printf("enter your choice\n");
scanf("%d", &choice);
switch(choice)
{ case 1: if(a==b || b==c || c==a)
          printf("It is isosceles triangle");
          else
          printf("not length of isosceles
                  triangle");
          break;
```

```
case 2: if(a*a >= (b*b+c*c) || b*b >= (a*a+c*c) ||
        c*c >= (a*a + b*b))
        printf(" It is right angle triangle");
        else
        printf(" Not right angle triangle");
        break;

case 3: if(a==b && b==c && c==a)
        printf(" It is an equilateral
                triangle ");
        else
        printf(" Not equilateral triangle");
        break;

case 4: exit(0);
    }
}
return 0;
}
```

⑤ Convert the following if else if construct in to switch case.

```
if (var ==1)
  System.out.println ("good");
else if (var ==2)
  system.out.println ("better");
else if (var ==3)
  System.out.println ("best");
else
  system.out.println("invalid");
```

Sol^

```
#include <stdio.h>
int main()
{ int var;
printf("enter the var");
scanf("%d", &var);
switch (var) {
case 1: printf("good");
        break;
case 2: printf("better");
        break;
```

```
case 2: printf(" best ");
        break;

default: printf("invalid");

} return 0;
}
```

⑥ program to check whether a year is a leap year or not. Using switch statement.

```
#include<stdio.h>
int main()
{ int x;
printf(" enter year \n");
scanf("%d", &x);
switch(x%100==0)
{ case1 : switch(x%400==0)
          { case0: printf(" leap year ");
                   break;
            case1: printf(" Non leap year ");
                   break;
          } break;
```

case 0: switch(n%4==0)

{ case 1: printf("leap year");
break;

case 2: printf("non leap year");
break;

}

}

(7) program to take the value from the user as ~~unit~~ input electricity unit charge and calculate total electricity bill according to the given condition. Using the switch statement:

- for the first 50 unit Rs 0.50/unit
- for the next 100 unit Rs 0.75/unit
- for the next 100 unit Rs 1.20/unit
- for the unit above 250 Rs 1.50/unit

An additional surcharge of 20% is added to the bill.

```
#include<stdio.h>
int main()
{ float x; amount = 0; total = 0;
printf("enter the value");
scanf("%f", &x);
switch(x <= 50)
{ case 1: amount = x * 0.5;
          break;
case 0: switch(x <= 150)
        { case 1: amount = 25 + (x - 50) * 0.75;
                  break;
          case 0: switch(x <= 250)
                  { case 1: amount = 100 + (x - 150) * 1.20;
                            break;
                    case 0: amount = 220 + (x - 250) * 5;
                            break;
                  } break;
        } break;
}
total = amount + amount * 0.20;
printf("total amount = %f", total);
return 0;
}
```

⑧ program to convert a positive number in to a negative no and negative no in to positive using switch statement.

Sol^n →

```
#include <stdio.h>
int main()
{
    int n, a;
    printf("1. positive to negative \n 2. negative to positive \n");
    printf("Enter your choice \n");
    scanf("%d", &n);
    switch (n)
    {
    case 1: printf("Enter +ve Number");
            scanf("%d", &a);
            printf("%d", -a);
            break;
    case 2: printf("Enter -ve no");
            scanf("%d", &a);
            printf("%d", -a);
    }
    return 0;
}
```

⑨ program to convert even number in to its upper nearest odd no. switch statement.

Ans:

```
#include <stdio.h>
int main()
{ int n;
printf("enter no");
scanf("%d", &n);
switch (n%2==0)
{ case 1: printf("%d", n+1);
          break;
  case 2: printf("%d", n);
          break;
} break;
return 0;
}
```

(10) C program to find all roots of a quadratic eq^{n} using switch case.

Ans:

```
#include<stdio.h>
#include<math.h>
    int main()
{   int a, b, c, d;
    float root1, root2, imaginary;

    printf("Enter a, b, c values");
    scanf("%d %d %d", &a, &b, &c);

    d = (b*b)-(4*a*c);
```

```
switch ( D > 0 )

{ case 1:
      root1 = (-b + sqrt(d)) / 2a;
      root2 = -b - sqrt(d)) / 2a;
      printf(" Two distinct ~~real~~ and
            real roots are %.4f %.4f", root1, root2);

      break;

case 0: switch ( D < 0 )

    { case 1:
        root1 = root2 = -b/(2*a);
      imaginary = sqrt(-d) / 2a;
    printf(" Two distinct and imaginary
          roots : %.2f + i%.2f and
          %.2f - i%.2f", root1, imaginary,
          root2, imaginary );

        break;

    case 0:  root1 = root2 = -b/(2*a);
      printf(" Two equal and real roots
          exist : %.2f and %.2f", root1,
          root2 );

        break;
  } } }
```