

**Assignment #6**

**Chapter 9 : Flow of Control**

1. Compare and contrast the following :
  - a. While and do.. while loop
  - b. If statement and switch... case
  - c. If statement and conditional operator
2. What is the significance of default clause in a switch ... case statement?
3. Explain the four jump statements in C++.
4. Predict the output of the following code fragments :

(i)     for(x=0;x<2;x++)  
          {  
              for(j=0;j<3;j++)  
                  cout<<'\$';  
          }

(ii)     for(i=5;i<5;i++)  
          cout<<i<<endl;  
  
          cout<<"HELLOOO";

(iii)    int x=0;  
          int y=10;  
          while(x<y)  
          {  
              Cout<<y;  
              y--;  
          }

(iv)     int i=j=0;  
          do  
          {  
              Cout<<'\*'\*<<endl;  
              J++;  
          }while(j<=0);

(v)     ...  
          ....  
          ....  
          Switch(x)  
          {  
              Case 1 : cout<<'l'<<endl;

```
Case 2 : cout<< 'N'<<endl;
Case 3 : cout<<'D'<<endl; break;
Case 4: cout<<'I'<<endl;
Case 5 : cout<<'A'<<endl;
Default : cout<<"Wrong Number";
```

```
}
```

What will be the output if the user enters ---

(a) 1                      (b) 3                      (c) 7      (d) 4

(vi)

```
.....
```

```
....
```

```
long num=6364837;
```

```
long result=0;
```

```
do
```

```
{
```

```
    result *=10;
```

```
    int num1 = num%10;
```

```
    Result += num1;
```

```
    Num/=10;
```

```
}while(num);
```

```
Cout<<"The result is "<<result<<endl;
```

```
}
```

5. Identify the errors(including logical errors if any) in the following program :

(i)      int i=5;

```
while((i<10) && (i>20))
```

```
    Cout<<" In the loop";
```

```
i--;
```

(ii)     int x=10

```
do
```

```
{
```

```
    Cout<<"god show";
```

```
    x-=2;
```

```
}while(x!=5)
```

#### PROGRAMS

1. WAP to display all the multiples of 3 between 20 and 50.

2. To accept a character and display whether it is a vowel or not.
3. To accept numbers from (1- 7) and display the corresponding week day . An error message should be displayed if the user enters any other number.
4. To display all even numbers between 50 and 80 using do...while loops.
5. To print Fibonacci series between 0 and 30.
6. To accept a number and display whether it is a prime number or not.
7. To accept a number and display whether it is an Armstrong number or not.
8. To display the factorial of a number accepted by the user.
9. To accept a number and display its table upto 10 in proper format.
10. To accept 3 numbers and find the largest number. The program should continue as long as the user wishes to.
11. To accept a number and display whether it is a digit , an alphabet or a special character.
12. To accept a number and display its square if the number is even and cube if it is odd.
13. Write a menu driven program to form a CALCULATOR which does the following operations – Addition if the user enters '+', Subtraction if the user enters '-', multiplication if the user enters '\*' and Division if the user enters '/'.  
Note : Use Switch – case and the program should continue as long as the user wishes to.
14. WAP to print the sum of first n natural numbers. Accept the value of n from the user.
15. WAP to accept a year and print whether it is a leap year or not.
16. Write a menu driven program to calculate the area of a rectangle , circle , triangle or square depending on the option chosen by the user. The user should be allowed to exit the program only through the exit option of the MAIN MENU.
17. WAP to accept a number and produce the following output according to the number entered.:  
\*  
\* \*  
\* \* \*  
\* \* \* \*  
\* \* \* \* \*  
( in the above output the number entered is 5)
18. WAP to display the sum of the following series after accepting the values of x and n  
$$x + x^2/2 + x^3/3 + x^4/4 + \dots + x^n/n$$
19. WAP to accept a number and then display the reverse of that number.
20. WAP to find the roots of a quadratic equation.
21. WAP to accept 10 numbers and display whether the number entered is even or odd. Also display the count of even and odd numbers.
22. WAP to accept 10 numbers and display the greatest number , smallest number and sum of all the numbers.