NAME : _____

STUDENT NO. : _____

GROUP : _____

LESSON 1: SWITCH STATEMENT

(i) `switch` statement is an **alternative method** for multi-way selection. It is often used to replace the nested `if` statements to avoid confusion of deeply nested `if`s.

(ii) `switch` statement only evaluates an **integer** expression or a **character** constant value.

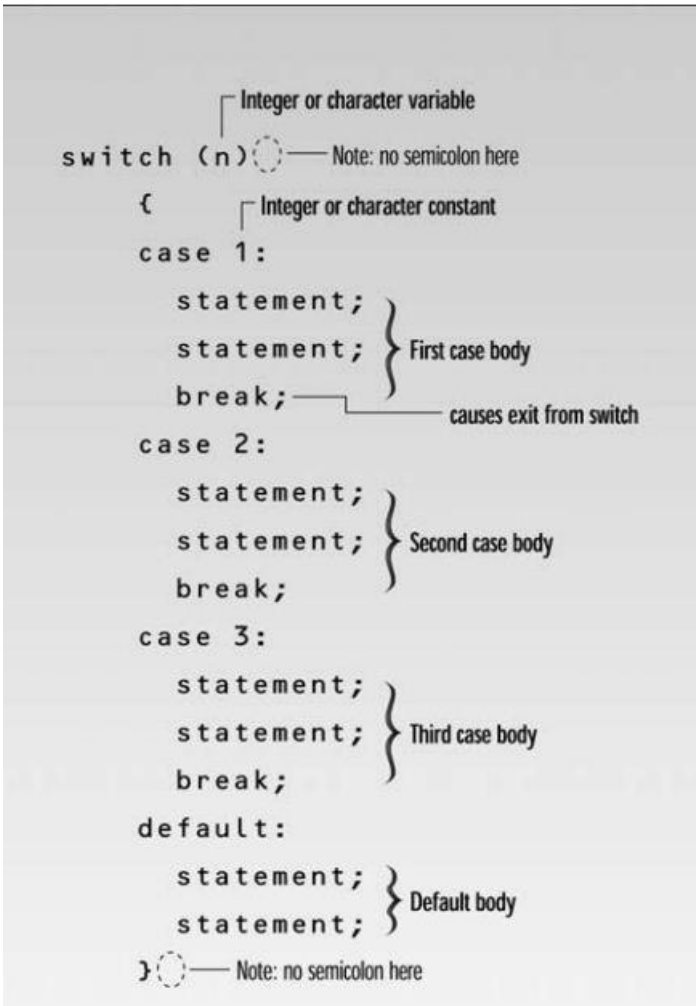


Figure 1: General syntax of `switch` statement

:: EXAMPLES ::

Convert the following complete program in C++ using multiple if statements to switch statements.

(a)

```
#include<iostream>
```

```
using namespace std;

int main()
{
    int code;

    cout<<"Enter the code (1, 2, 3 or 4):";
    cin>>code;

    if (code == 1)
       cout<<"Diploma in Computer Science."<<endl;
    else if (code == 2)
       cout<<"Diploma in Accountacy."<<endl;
    else if (code == 3)
       cout<<"Diploma in Business Study."<<endl;
    else if (code == 4)
       cout<<"Diploma in Banking."<<endl;
    else
        cout<<"Invalid code."<<endl;

    system("pause");
    return 0;
}
```

(*b*)

```
#include<iostream>
using namespace std;

int main()
{
    char grade;

    cout<<"Enter the grade: ";
    cin>>grade;

    if (grade == 'A' || grade == 'a')
    {
       cout<<"\nYour score is between 90 to 100."<<endl;
       cout<<"Excellent."<<endl;
    }
    else if (grade == 'B' || grade == 'b')
    {
       cout<<"\nYour score is between 80 to 89."<<endl;
       cout<<"Good."<<endl;
    }
    else if (grade == 'C' || grade == 'c')
    {
       cout<<"\nYour score is between 70 to 79."<<endl;
       cout<<"Fair."<<endl;
    }
    else if (grade == 'D' || grade == 'd')
    {
       cout<<"\nYour score is between 60 to 69."<<endl;
       cout<<"Work harder."<<endl;
    }
    else if (grade == 'E' || grade == 'e')
    {
       cout<<"\nYour score is between 0 to 59."<<endl;
```

```
        cout<<"Poor."<<endl;
    }
    else
        cout<<"Invalid grade."<<endl;

    cout<<endl;
    system("pause");
    return 0;
}
```

:: EXERCISE ::

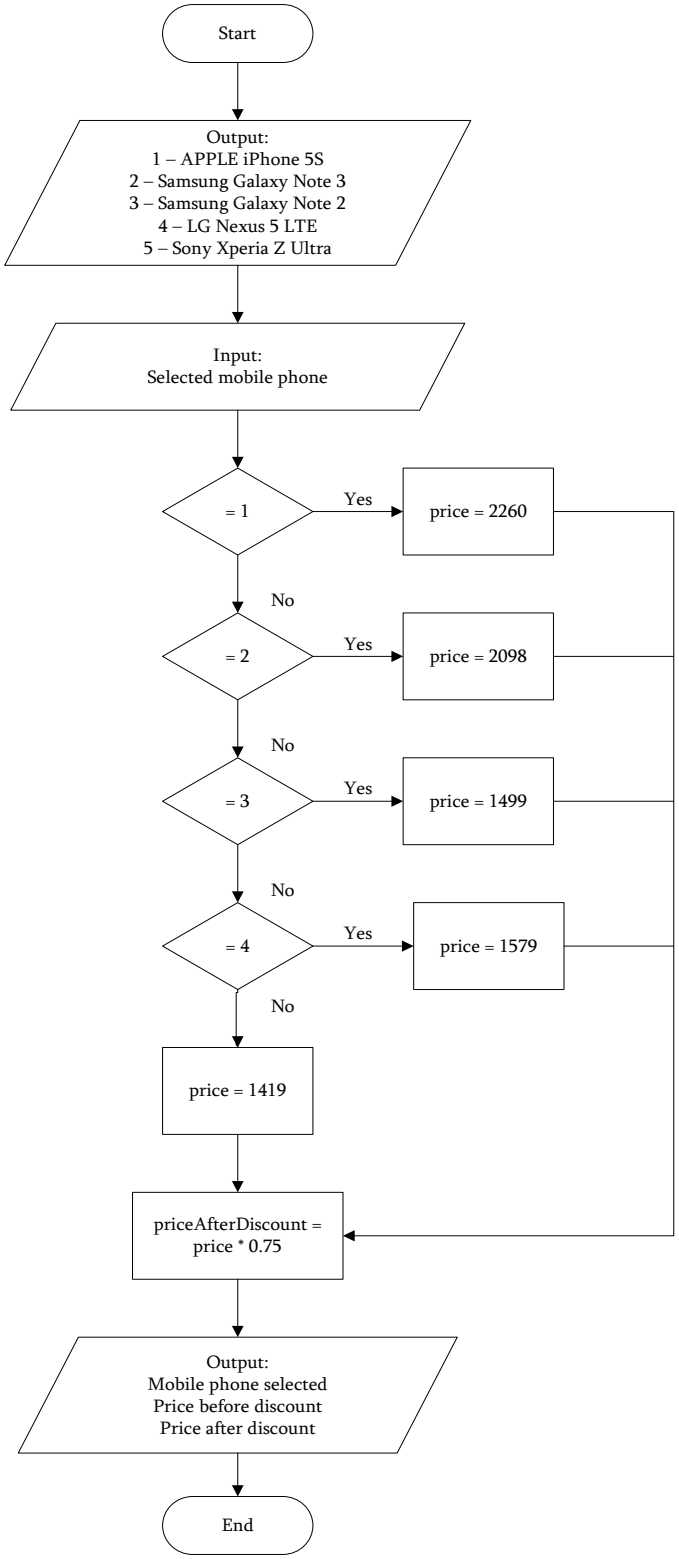
QUESTION 1

Using a switch statement, write a program that reads two integers and a character. The operation to be performed is based on the character input, as indicated in the table below:

Character Input	Operation
+	Display the sum of two numbers
-	Display the difference
/	Display the quotient
*	Display the product
%	Display the remainder

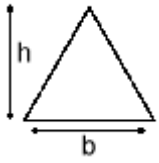
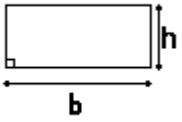
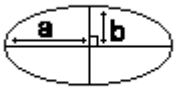
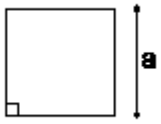
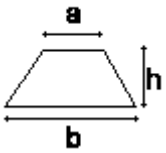
QUESTION 2

Write a complete program in C based on the following flowchart (using switch statements):



QUESTION 3

Menu Option	Diagram	Formula

1		Area of triangle = ½ * b * h
2		Area of rectangle = b * h
3		Area of eclipse = TT * a * b
4		Area of square = a^2
5		Area of trapezoid = ½ * (a+b) * h

Using switch statement, write a complete program to calculate the area of shapes mentioned in the above table. Declare TT as constant to the value of 3.142 and format the output to 2 decimal places.