



Course Name: Programming Fundamentals (C++)
Assignment

Q1: Write equivalent programs without using switch-statements:

1.

```
switch (c) {  
    case 'A' : cout << "A" << endl;  
               break;  
    case 'B' : cout << "B" << endl;  
               break;  
    default:  cout << "*****" << endl;  
}
```
2.

```
switch (c) {  
    case 'A' : cout << "A" << endl;  
    case 'B' : cout << "B" << endl;  
    default:  cout << "*****" << endl;  
}
```
3.

```
switch (c) {  
    case 'A' : cout << "A" << endl;  
               break;  
    case 'B' : cout << "B" << endl;  
               break;  
}
```

Q2: Write a program that reads 4 integer values and outputs the maximum and the minimum of them.

Q3: Write a program that tests using switch-statement whether an integer Value is even?

Q4: What's wrong in the following statements?

(i) if(a > b) if(c > d) x = y; s = t; else u = v;

(ii) if(a > b) if (c > d) { x = y; else u = v }

Q 5: Which of the following loops calculates the summation s?

$$s = \sum_{i=1}^n i$$

(i) s = 0; i = 0;

```
while (i <= n) {  
    s = s + i;  
    i=i+1;  
}
```

(ii) s = 0; i = 0;

```
while (i < n) {  
    i=i+1;  
    s = s + i;  
}
```

(iii) s = 0; i = 0;

```
while (i <= n) {  
    i=i+1;  
    s = s + i;  
}
```

Q6: What's the Value of a and b?

`a = 3; b = 0;`

1. `while (a>=b) if (b==0) a--;`
2. `while (a>=b) { a=a+(b-1); b=b+a; }`
3. `while (a>=b) { a=a-b; if (b==0) b++; }`

Q7: By which values of a will the following loops terminate?

1. `while (a>=5) { a=a-1; do { a = a-1; } while (a>=5); }`
2. `do { a=a-1; while (a<=5) a = a-1; } while (a>=5);`

Q8: Write a program that reads n Integer Values and prints the average of them on the screen.

Q9: Write a program that estimates the value of e by using the formula

$$e = 1 + 1/1! + 1/2! + 1/3! + \dots$$

Q10: Write a program that calculates the Value of π from the infinite series:

$$\pi = 4 - 4/3 + 4/5 - 4/7 + 4/9 - 4/11 \dots$$

Q11: Write an equivalent Program using switch statement:

```
if (note == 'C') {
    cout << "do";
} else
    if (note == 'D') {
        cout << "re";
    } else
        if (note == 'E') {
            cout << "mi";
        } else
            if (note == 'F') {
                cout << "fa";
            } else
                if (note == 'G') {
                    cout << "so";
                } else
                    if (note == 'A') {
                        cout << "la";
                    } else
                        if (note == 'H') {
                            cout << "ti";
                        } else {
                            cout << "Unknown Note";
                        }
}
```