

Midterm 1 (CSC115- C++ Programming) – Fall 2019

Student Name: Answer

Student ID:

Enter the answers for **Question 1** in the table below:

1.1	1.2	1.3	1.4	1.5
B	A	D	C	A

Question 1: (5 marks)

1.1 Find the output of the following code:

```
#include <iostream>
using namespace std;
int main()
{
    int x = 10;
    cout << -- x + 1 << " ";
    cout << ++ x + 1;
return 0;
}
```

- a) 10, 10
- b) **10, 11**
- c) 9, 10
- d) 9, 11

1.2 Find the output of the following code:

```
#include <iostream>
using namespace std;
int main()
{
    int x = 7, y = 5;
    if (! (x < y))
        cout << "x does not equal y";
    else
        cout << "x equals y";
return 0;
}
```

[a] x does not equal y

[b] x equals y

1.3 Find the output of the following code:

```
#include <iostream>
using namespace std;
int main()
{
    int x = 2, y = 3;
    cout << x * y + 3 - 11 / 5 + x % y ;
return 0;
}
```

- a) 2
- b) 3
- c) 6
- d) **9**

1.4 Find the output of the following code:

```
#include <iostream>
using namespace std;
int main()
{
    int p=1, n=523;
    while(n>0)
    {
        p=p*(n%10);
        n=n/10;
    }
    cout << p;
return 0;
}
```

- a) 10
- b) 20
- c) **30**
- d) 5

1.5 Find the output of the following code:

```
#include <iostream>
using namespace std;
int main()
{
    int s=0;
    for (int i=1;i<=10;i+=2)
        s=s+i;
    cout << s;
return 0;
}
```

- a) 25
- b) 26
- c) 30
- d) 55

Question 2: (5 marks)

Make changes in the following program so that it uses a switch-case statement in place of the if-else statements:

```
#include <iostream>
using namespace std;
int main()
{
    int wheels=0;

    cout << "Enter number of wheels ";
    cin >> wheels;

    if(wheels == 2) cout << "bicycle";
    else if(wheels == 4) cout << "car";
    else if(wheels ==6) cout << "bus";
    else if(wheels == 8) cout << "truck";
    else cout << "I don't know what you are";
return 0;
}
```

Answer 2:

```
#include <iostream>
using namespace std;
int main()
{
    int wheels=0;
    cout << "Enter number of wheels ";
    cin >> wheels;
    switch(wheels)
    {
        case 2: cout << "bicycle";break;
        case 4: cout << "car";break;
        case 6: cout << "bus";break;
        case 8: cout << "truck";break;
        default: cout << "I don't know what you
are?";
    }
return 0;
}
```

Question 3: (5 marks)

Write a program on C++ that asks the user to type an integer N and calculates u_N defined

by:

$$\begin{cases} u_0 = 1, u_1 = 1 \\ u_{n+1} = u_n + u_{n-1}, \text{ for } n \geq 1 \end{cases}$$

Sample

Enter the value of N=:5

U(5)=8.

Answer 3:

```
#include <iostream>
using namespace std;
int main()
{
    int N,u=1,v=1,w;
    cout << "Enter the value of N:";
    cin >> N;
    for (int i=2;i<=N;i++)
    {
        w=v+u;
        u=v;
        v=w;
    }
    cout<<"U("<<N<<")="<<w;
    return 0;
}
```