Student Name :

Student ID :

Student Seat Number :

Time Allowed : **30 minutes**

Question 1: What is the output of the following program? **(1 x 6 *marks*).**

(1)
```
int x = 0;
x>0?x++:--x;
cout << "x is [" << x << "]";
```

(2)
```
double a = 3.1415927;
cout<< int(a*1000);
```

(3)
```
int x=0, y=0;
if((x=0) && (y=3));
cout<< y;
```

(4)
```
int x=0, y=0;
if((x==0) || (y=3));
cout<< y;
```

(5)
```
int x,y;
x = 30;
y = 10;
if(x < y);
    y = y + 10;
cout<< y;
```

(6)
```
int x,y;
x = 30;
y = 10;
if(x >= y)
    x = x + 10;
else
    x = x - 10;
    y = x + 10;
cout<< y;
```

Your Answers:

(1) **x is [-1]**			(2) **3141**
(3) **0**	(4) **0**	(5) **20**	(6) **50**

Question 2: Multiple-Choice Questions (Select exactly ONE choice for each question). (**1 x 4 *marks***).

1) What is the largest integer value that can be represented by an int variable?

(A) 2^{32} **(B)** $2^{32}-1$ **(C)** 2^{31} **(D)** $2^{31}-1$

2) What is output of the following code: cout<<int ('B') ?

(A) 0 **(B)** 255 **(C)** 66 **(D)** 278

3) What is output of the following code: cout<<1/2 ?

(A) 0.5 **(B) 0** **(C) 1** **(D) 2**

4) Let x denote a variable, what is the correct C++ expression for the following description: "x is larger than or equal to 0 and x is smaller than 256"?

(A) 0 =< x & x < 256 **(B) 0 =< x < 256** **(C) x>=0 && x < 256** **(D)x>=0 I x <= 255**

Your Answers:

1) **D**	(2) **C**	(3) **B**	(4) **C**

Question 3: The following program outputs the **larger** user input (x and y). Some code contains syntax errors. Write the correct codes in the right column. (Hints: Each line contains at most one error. Marks will be deduced for incorrect attempts). **(7 *marks*).**

Line number	Program Code	Correct Code
1		
2		#include <iostream>
3	namespace std;	using
4	void main	()
5	{	
6	int x,y	;
7	cin<<x<<y;	cin>>x>>y;
8	if(x<y)	
9	cout<<x<<endl;	cout<<y<<endl; //extra credit
10	else;	else
11	cout<<y<<endl;	cout<<x<<endl; //extra credit
12		}
13		

Question 4 (**5 *marks***).

Complete the following program that converts a student's mark to the corresponding grade. The mark is obtained from user input (via ***cin***) and stored in an int variable named ***mark***. If ***mark*** is larger than 80, assign character 'A' to variable ***grade***; if ***mark*** is between 61 to 80 (larger than or equal to 61 but smaller than or equal to 80), assign character 'B' to variable ***grade***; if ***mark*** is between 51 to 60, assign character 'C' to variable ***grade***; if ***mark*** is smaller than or equal to 50, assign character 'F' to variable ***grade***.

```
void main
{
        int mark;
        char grade;


        cin>>mark;
        if(mark>80)
            grade='A';
        else if(mark>60)
            grade='B';
        else if(mark>50)
            grade='C';
        else
            grade='F';



        cout<<grade<<endl;
}
```