


<p align="center">Philadelphia University Faculty of Engineering Department of Computer Engineering</p>		<p>Date:- 01/04/2015 Allowed time:- 50 minutes</p>
Programming Language (630263)		First Exam
Student Name: - ID: -		
Instructors: <input type="checkbox"/> Dr. Nasser Halasah <input type="checkbox"/> Dr. Ali Al-Khawaldeh <input type="checkbox"/> Eng. Sultan Al-Rushdan <input type="checkbox"/> Fadi Audeh		
Lecture Time: <input type="checkbox"/> ح ث خ 08:10 – 09:00 <input type="checkbox"/> ح ث خ 10:10 – 11:00 <input type="checkbox"/> ح ث خ 12:10 – 13:00 <input type="checkbox"/> ن ر 12:45 – 14:15 <input type="checkbox"/> ن ر 14:15 – 15:45		

Question 1: Chose the correct answer of the followings: **5 points**

- A. Which of the following is a legal variable name?
a. prog! c. ltemp d. car 1
- B. The expression `static_cast<int>(5.2)+static_cast<int>(9.7)` evaluates to
a. 13 c. 14.8
 d. 15
- C. Suppose `x` is 5 and `y` is 7. Choose the value of the following expression:
`(x != 7) && (x <= y)`
a. false c. 0
 d. null
- D. Which of the following expressions correctly determines that `x` is greater than 10 and less than 20?
a. `10 < x < 20`
b. `(10 < x < 20)` d. `10 < x || x < 20`
- E. Which of the following is a comparison operator?
a. = c. !!
 d. &

Question 2: Perform the following tasks. **2 points**

<p>Write a C++ code that print the following</p> <p align="center">My name is “ your name”</p>	<pre>cout<<"My name is \"your name\"";</pre>
<p>Write a C++ code that calculate</p> $y = \frac{x + 7}{2x} 5x$	$y=(x+7)/(2*x)*5*x$

Question 3: Find the error(s) (logical or syntax) in the following codes and correct it. **3 points**

Code	correction
<pre>int main() { double PI; PI=3.14; C=PI*D; double D; cout<<"C= " <<C<<endl; return 0; }</pre>	<pre>double D,C; C=PI*D;</pre>
<pre>int main() { int a; cout<<"Enter a number " <<endl; cin>>a if(a>0) cout<<"The Number is Positive" <<endl; else if(a<0) cout<<"The Number is Negative" <<endl; else if (a=0) cout<<"The Number is Zero" <<endl; return 0; }</pre>	<pre>cin>>a; if(a==0) or delete it</pre>
<pre>void main() { cout<<"The result of\"5*6\"<<5*6<<\"\\n\"; return 0; }</pre>	<pre>int main() cout<<"The result of\"5*6=\"<<5*6<<\"\\n\";</pre>

Question 4: What is the output of the following codes.

5 points

Code	Output
<pre>int x=5,y=6; cout<<+x-y--<<endl; cout<<"y= " <<y<<"x=" <<x;</pre>	<pre>0 y=5 x=6</pre>
<pre>int a=13,b=5; double c=0.5; cout <<a/static_cast<double>(b)+2*c<< endl; cout << 14 % 3 + 6.3 + b / a << endl;</pre>	<pre>3.6 8.3</pre>
<pre>int x=11; if(x%5) y=10; else if(x==4) y=20; else y=15; cout<<y<<endl;</pre>	<pre>10</pre>

Question 5: Write a program that ask the user to enter a real number x then the program should calculate the value y according to the following equation then output y. **5 points**

$$y = \begin{cases} x^3 + 2x^2 + 1, & x < -10 \text{ or } x > 0 \\ -x^3 + 3x + 1, & -10 \leq x < -5 \\ 2x^2 - 5x + 4, & -5 \leq x \leq 0 \end{cases}$$

```
#include<iostream>
#include<cmath>
using namespace std;
int main()
{
    float x,y;
    cin>>x;

    if(x<-10 || x>0)
        y=pow(x,3)+2*pow(x,2)+1;
    else
        if(x>=-10 && x<-5)
            y=-pow(x,3)+3*x+1;
        else
            y=2*pow(x,2)-5*x+4;

    cout<<y<<endl;
    return 0;
}
```

Or

```
#include<iostream>
#include<cmath>
using namespace std;
int main()
{
    float x,y;
    cin>>x;

    if(x<-10 || x>0)
        y=pow(x,3)+2*pow(x,2)+1;
    if(x>=-10 && x<-5)
        y=-pow(x,3)+3*x+1;
    if(x>=-5 && x<=0)
        y=2*pow(x,2)-5*x+4;

    cout<<y<<endl;
    return 0;
}
```