


Philadelphia University Faculty of Engineering Department of Computer Engineering		Date:- 18/04/2017 Allowed time:- 50 Minutes
Programming Language (630263) First Exam		
Student Name: -		ID: -
Instructor:-	<input type="checkbox"/> Dr. Nasser Halasa	<input type="checkbox"/> Dr. Ali Al-Khawaldeh
		<input type="checkbox"/> Eng. Sultan Al-Rushdan
Lecture Time:-	<input type="checkbox"/> 10:10-11:10 حتم	<input type="checkbox"/> 11:10-12:10 حتم
	<input type="checkbox"/> 15:10-16:10 حتم	<input type="checkbox"/> 12:10-13:10 حتم
	<input type="checkbox"/> 12:45-14:15 نر	<input type="checkbox"/> 14:15-15:45 نر

Question 1: Chose the correct answer for the following questions: **5 points**

1- Which of the following is a valid variable name
a). 1num b). num1 c). num\$1 d) num-1
2- The result of 2+13%5*3 will be:
a). 11 b). 15 c). 0 d). 13
3- Which of the following is a valid output operation
a). cout>>x>>y b). cout<< (x, y) c). cout<<x<<y d). cout (x&&y)
4- If x, y and z are float variables and x=2.5, y=0.25 then the value of z after executing the following statement is: z=(x*y?x+y:x-y);
a). 3.0 b) 2.75 c) 2.25 d) 2.0
5- Which of the following expressions correctly determines that x is greater than 3 or less than -5
a). -5 < x && x < 3 b). 3 > x && x < -5 c). -5 < x x > 3 d). -5 > x x > 3

Question 2: Find the error in the following codes and correct them. **3 points**

Code	correction
<pre>int x; (initialize x) switch(x) {case 1: cout<<"111111"<<endl; break; case 1: //case 1 already exist cout<<"222222"<<endl; break; default: cout<<"444444"<<endl; }</pre>	<pre>int x; <u>cin>>x;</u> switch(x) {case 1: cout<<"111111"<<endl; break; case <u>2:</u> cout<<"222222"<<endl; break; default: cout<<"444444"<<endl; }</pre>
<pre>float a=3.5; if(<u>2<a<10</u>) //wrong condition cout<<5*x<<endl; a=7.2; <u>else</u> //else without matching if cout<<6*x;</pre>	<pre>float a=3.5; if (<u>2<a&&a<10</u>) <u>{</u> cout<<5*x<<endl; a=7.2; <u>}</u> else cout<<6*x;</pre>
<pre><u>float</u> a=13,b=15; //a must be int int c=7; int z=a%3+c; c+=4; //wrong operation cout<<"z="<<z<<endl; cout<<"c="<<c<<endl;</pre>	<pre><u>int</u> a=13,b=15; int c=7; int z=a%3+c; <u>c+=4;</u> cout<<"z="<<z<<endl; cout<<"c="<<c<<endl;</pre>

Question 3: Perform the following tasks**2 points**

Write a C++ statement that calculate the following equation $f = \frac{1}{x^2 - 5} - \frac{x^3}{x + 2}$	$f = 1 / (\text{pow}(x, 2) - 5) - \text{pow}(x, 3) / (x + 2)$
If x=10 and y=15 then the following conditions will evaluate to $(x != 10) (y > 7) \&\& (x > y)$ $(x \% 3) \&\& (y \% 5)$	false false

Question 4: What is the output of the following codes.**5 points**

Code	Output
<pre>#include<iostream> using namespace std; void main() { cout<<5/2*1.2<<endl; cout<<16%13+4<<endl; }</pre>	2.4 7
<pre>#include<iostream> using namespace std; void main() { int x=0,y=4; if(!x) { cout<<"a="<<y*3<<endl; y=0; } if(!y) { cout<<"b="<<y*2<<endl; } }</pre>	a=12 b=0
<pre>#include<iostream> using namespace std; void main() { float a; int x; cin>>a; x=((a>5.5)?a*2:a*3); cout<<"x="<<x<<endl; }</pre>	Input: 3.2 output: x=9 Input: 8.4 output: x=16

Question 4: continued

Code	Output
<pre>#include<iostream> using namespace std; void main() { int var1,var2; cin>>var1; switch(var1%5) {case 0: var2=var1%7; break; case 1: var2=var1%9; break; case 2: var2=var1%11; break; default: var2=var1%3; } cout<<var2; }</pre>	<pre>Input: 9 output: 0 Input: 11: output: 2</pre>
<pre>#include<iostream> using namespace std; void main() { char ch='b'; switch(ch) { default: cout<<"444444"<<endl; case 'A': cout<<"111111"<<endl; break; case 'B': cout<<"222222"<<endl; break; case 'c': cout<<"333333"<<endl; break; } }</pre>	<pre>444444 111111</pre>

Question 5: Write a program that asks the user to enter the values of s and n then the program should calculate the value of p using the following equation, then output the value of p .

$$p = \frac{1}{s + \frac{1-s}{n}}$$

The value of s should be between $0 \leq s \leq 1$ and n should be an integer value greater than 1, the program should display an error message if one of these conditions is not applied. **5 points**

```
#include<iostream>
using namespace std;
void main()
{
    float p,s;
    int n;
    cout<<"s=";    cin>>s;
    cout<<"n=";    cin>>n;

    if (s>=0&& s<=1)
        if (n>1)
        {
            p=1/(s+(1-s)/n);
            cout<<"p="<<p<<endl;
        }
        else
            cout<<"ERROR: n must be greater than 1"<<endl;
    else
        cout<<"ERROR: s must be between 0 and 1"<<endl;
}
```