

CS101 Introduction to Programming

**Jordan University of Science and Technology
Department Of Computer Science**

CS101: Introduction to Programming

First Exam

First Semester 2011-2012

25 --October- 2011

Form B

57
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Name (Arabic)

Student ID

Section

Instructor

Student Signature

STID:

Part1: Multiple Choice and fill the blanks (13marks)

Q1: Select the correct answer from the list of the suggested answers. (10marks)

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1. The compiler is used to

- a. check for syntax errors
- b. check for semantic errors
- c. check for logical errors
- d. check for run-time errors

2. Which of the following is not an Integral data type?

- a. int
- b. bool
- c. long
- d. float

3. When the value of one type is **automatically** changed to another type, the process is called :

- a. Implicit type coercion
- b. Explicit type conversion

4. What is the output of the following code

```
string A="Hello", B="hello";
```

```
cout<<(A==B)<<endl;
```

- a. 1
- b. 0
- c. true
- d. false

5. All the following identifiers are **illegal** EXCEPT :

- e. "value"
- f. return
- g. x.y
- h. rem

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Q2. Fill in the Blank with the correct word (s). (3marks)

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- The preprocessor directives begin with # and are processed by the linker.
- Every c++ statement ends with ;.
- The algorithm is a step-by-step problem-solving process, where a solution is achieved in a finite amount of time.

Part2: Tracing (26 marks)

Q3. What is the output of the following code segments? (20 marks)

20

SN	Code Segment	output
1 4 marks 4	<pre>int x= 7, y; int z= 2, w; y = x % z; z = 2 * (y + 3); w = ((x - 2) * y) + z; z -= x; cout<<"x =" <<x <<endl <<"y =" <<y << endl; cout <<"z ="<<z <<endl <<"w =" <<w << endl;</pre>	<pre>x = 7 y = 1 z = 1 w = 13</pre>
2 4 marks 4	<pre>cout << "Hello Just" << endl; cout << "\\\"First Exam\\\"" << endl; cout<<"Hi\tAll\bGoodBye\n";</pre>	<pre>Hello Just "First Exam" Hi AllGoodBye</pre>
3 3 marks 3	<pre>int x=4, y=7, w=3; int z= x++ * w - --y; cout<<x<<" " <<y<<" " <<z<<endl;</pre>	<pre>5 6 6</pre>
4 3 marks 3	<pre>int x=5.3, y=3; if(x==5 x==5 && y++>=4) cout<<"a"<<endl; if(7) cout<<"b"<<endl; else cout<<"c"<<endl;</pre>	<pre>a b</pre>
5 3 marks 3	<pre>// ASCII code of a is 97 cout<< static_cast<int>(10) % static_cast<int>('b')<<endl; cout<< static_cast<int> (10.9); cout<< static_cast<int> (-10.9);</pre>	<pre>10 10 -10</pre>

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<p>6 3 marks 3</p>	<pre>if (static_cast<int>(2.9)+2==5){ cout<<"CS101"<<endl;} else; cout<<"CS102"<<endl; cout<<"CS112";</pre>	<p>CS102 CS112 ✓</p>
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Q6. Identify and describe very briefly the errors that would prevent the following program from compiling or running: (6 points)

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```
#include<iostream>
using namespace std;

void main ()
{
  // this program is to determine the case of letter

  int ascii_value ;
  cout<<"please enter a character \n ";
  cin << ch;
  ascii_value = static_cast<int>(ch);

  if(ascii_value >=65 && ascii_value <=90)

    cout<<" uppercase ";

    cout<<endl;

  else if (ascii_value >=97 and ascii_value <=122)

    cout<<" lowercase "<<endl;

  ELSE
    cout<<" the character is not letter\n";
}
```

~~char ch;~~
 int ch;
 missing double cotation before please
 undeclared identifiere
 ch undeclared identifiere
 and is wrong it must be &&
 in capitale letters / so it's not reserved word and it will be undeclared identifiere, and missing semicolons

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Part3: Problems (21 marks)

Q5: (4 marks) Write a code that displays the following output.

```
My name is \nader\  
My favorite place is "Jordan"
```

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```
#include <iostream>  
using namespace std;  
int main()  
cout << "My name is \nader\" << endl ;  
cout << "My favorite place is \"Jordan\"";
```

Q6. (4marks) Rewrite the following statements in **two** statements only

```
int x;  
int y;  
y=2;  
x=4;  
y=y*x;  
x++;
```

4

```
int x=4, y=2;  
y = y * x++;
```

Q7. (3marks) Rewrite the following if statement as a single line with using ? :

```
if(x>10)  
    y=x+1;  
else  
    y=x+5;
```

3

```
x > 10 ? y = x + 1 : y = x + 5
```

Q8: (10 points) Write a C++ program that asks the users to enter a real value (x) and then compute the following function:

$$y = \begin{cases} x^2 - x + 5, & 0 < x < 5 \\ x/2 & \text{otherwise} \end{cases}$$

Notes:

- Provide the user with clear prompt
- Echo the user input
- Document your code

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```
#include <iostream>
using namespace std;
void main()
{
int x; //20110171031
int y; // 0.95 of 50
double x; //declaring statement
cout << "please insert one real value" << endl;
cin >> x; // input statement
cout << "you entered the valu = " << x;
if(x > 5)
if(x > 0 && x < 5) // conditional statement
cout << "y = " << x * x - x + 5 << endl;
else // conditional statement
cout << "y = " << x / 2 << endl;
}
```

// output statement

// output statement

// output statement

// output statement

// output statement

(Good luck)