Benha University Faculty of Engineering (at Shoubra) Electrical Engineering Department Preparatory year Attempt **all** the following questions:		**Midterm Exam 'B'** **Subject:** Computer - ECE 001 **Date:** Thursday 31/03/2016 **Duration:** 1 hour **№ of Questions:** 4 in 2 page(s) **Total Mark:** 15

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Question 1: (4 Marks)

Celsius to Fahrenheit Temperature Converter:

Write a complete C++ program that converts Celsius temperatures to Fahrenheit temperatures. The formula is as follows:

$$F = C × 9/5 + 32$$

The program should ask the user to enter a temperature in Celsius, and then display the temperature converted to Fahrenheit.

```cpp
#include <iostream>
using namespace std;
int main ( ) {

float C, F;
cout << "Please enter a temp. in Celsius";
cin >> C;
F = (C * (9/5)) + 32;
cout << F ;
return 0;
}
```
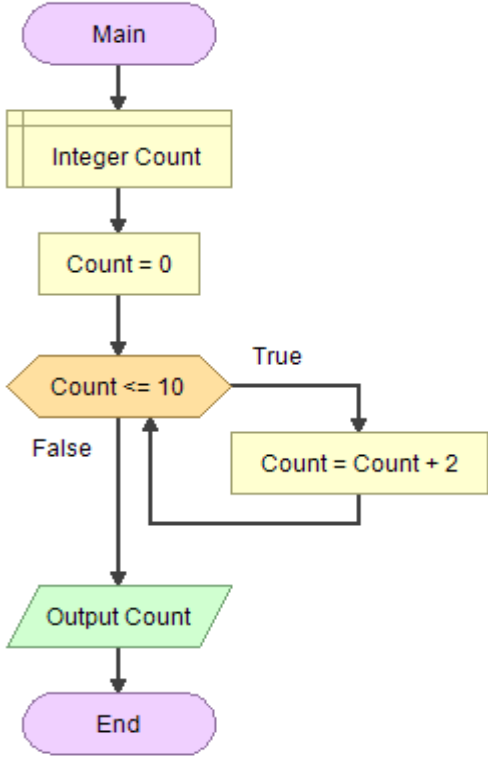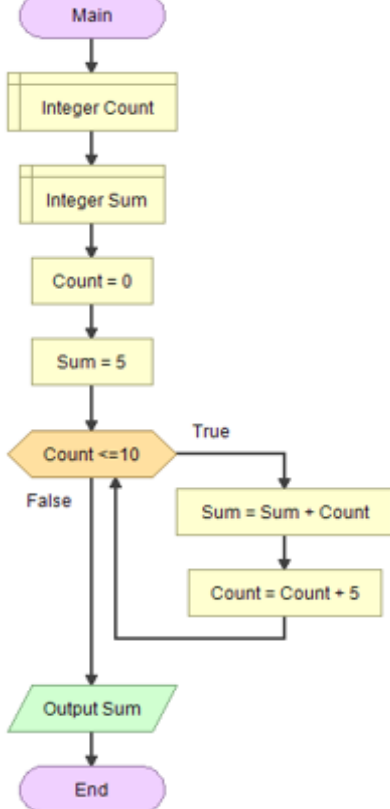
Benha University		**Midterm Exam 'B'**
Faculty of Engineering (at Shoubra)		**Subject:** Computer - ECE 001
Electrical Engineering Department		**Date:** Thursday 31/03/2016
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Question 2:   (4 Marks)

Determine the output of the following flowcharts:

a) (2 Marks)	b) (2 Marks)
Answer 12	**Answer** 20

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Question 3: (3 Marks)
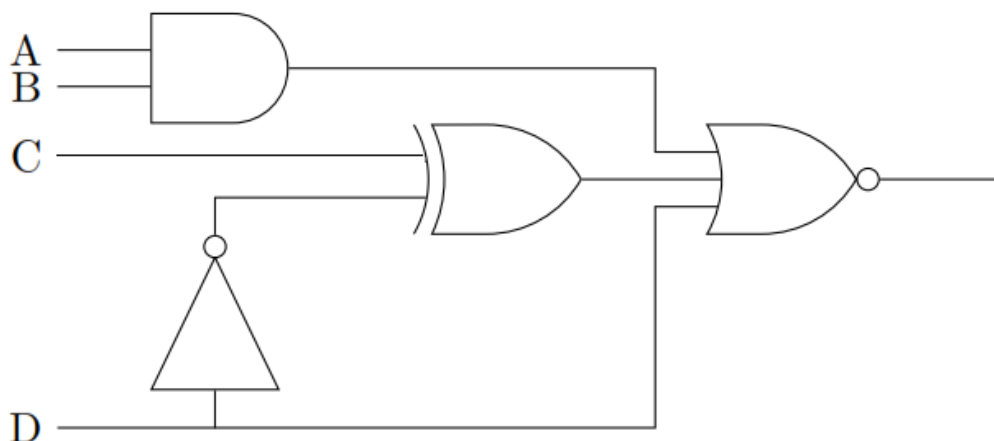
Choose the best answer:

1. The value $(101011)_2$ in a decimal system is

(a) 43   (b) 42   (c) 44   (d) A4

2. The value $(245)_8$ in a decimal system is

(a) 165   (b) 101100101   (c) 69   (d) A5

3. The value $(74)_{10}$ in a hexadecimal decimal system is

(a) 104   (b) 740   (c) 4A   (d) A4

4. A scanner is an example of a(n) ………………………….

(a) processing device   (b) output device   (c) storage device   (d) input device

5. A touchscreen device is an example of a(n) ………………………..

(a) processing device   (b) output device   (c) storage device   (d) input/output device

6. The last step in the machine cycle is ……………………………

(a) fetch   (b) execute   (c) decode   (d) store

Question 4: (4 Marks)

State the Boolean expression and the truth table of the following logic circuit:

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Output $= (A.B + C \oplus D' + D)'$

A	B	C	D	D'	A and B	Xor	Output
0	0	0	0	1	0	1	0
0	0	0	1	0	0	0	0
0	0	1	0	1	0	0	1
0	0	1	1	0	0	1	0
0	1	0	0	1	0	1	0
0	1	0	1	0	0	0	0
0	1	1	0	1	0	0	1
0	1	1	1	0	0	1	0
1	0	0	0	1	0	1	0
1	0	0	1	0	0	0	0
1	0	1	0	1	0	0	1
1	0	1	1	0	0	1	0
1	1	0	0	1	1	1	0
1	1	0	1	0	1	0	0
1	1	1	0	1	1	0	1
1	1	1	1	0	1	1	0

Good Luck
Dr.Shady Yehia Elmashad
Dr.Ahmed Bayoumi