Benha University Faculty of Engineering (at Shoubra) Industrial Engineering Department Level "0" Attempt ***all*** the following questions:		**Midterm Exam** **Subject:** Computer Programming – CPE 101 **Date:** Thursday 7/04/2016 **Duration:** 1 hour **№ of Questions:** 4 in 3 page(s) **Total Mark:** 30

Question 1: (4 Marks)

Determine the output for each of the following code snippets (assuming successful compilation):

a) (2 Mark)	b) (2 Mark)

cout<< "Welcome to \n C++";	int x=12, y;
	// declaration
	y = x%6 + 3;
	cout<< "Y="<<y;

Question 2: (8 Marks)

1) The expression a += 5 is equivalent to ……
(a) a = a + 5;
(b) a= 5;
(c) a = a – 5;
(d) none of the above

2) Below …… is an example of a logical operator.
(a) & &
(b) = =
(c) +
(d) =

3) The expression ! (8 < = 4) evaluated to ……
(a) true
(b) -1
(c) false
(d) none of the above

4) The expression a = 8 + 1 % 2 is evaluated to ……
(a) 9
(b) 0
(c) 1
(d) none of the above

5) If x = 3 before the following instruction, what is the value of x after the instruction: x *= 4; is executed?
(a) 12 (b) 7 (c) 3 (d) the statement is illegal

6) Which of the following is a legal variable name?
(a) 3shoubra (b) shoubra faculty (c) shoubra-faculty (d) Sh3oubra3

7) Which of the following is a correct declaration to a constant:
(a) float PI 3.14;
(b) # define float PI = 3.14;
(c) const float PI = 3.14
(d) None of them

8) Which of the following is a correct comment:

(a) / This is a comment
(b) /* This is a comment /*
(c) /// This is a comment //
(d) /* This is a comment */

Question 3: (8 Marks)

The volume of a cylinder:

Write a complete C++ program to calculate the volume of a cylinder. The volume is calculated using the following equation:

$$\text{Volume} = \pi r^2 h$$

Where: r is the radius of the circular end of the cylinder,
h height of the cylinder.

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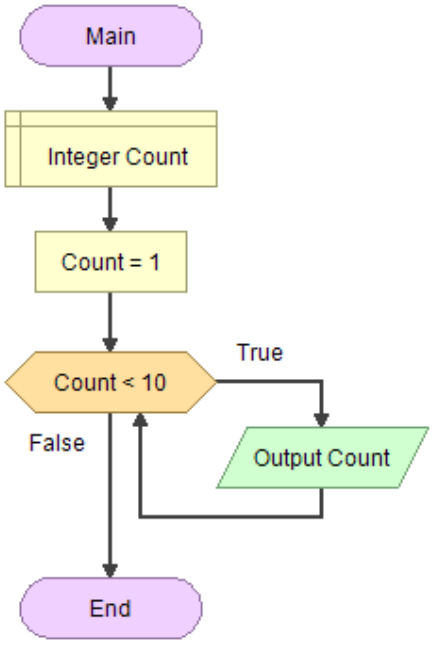
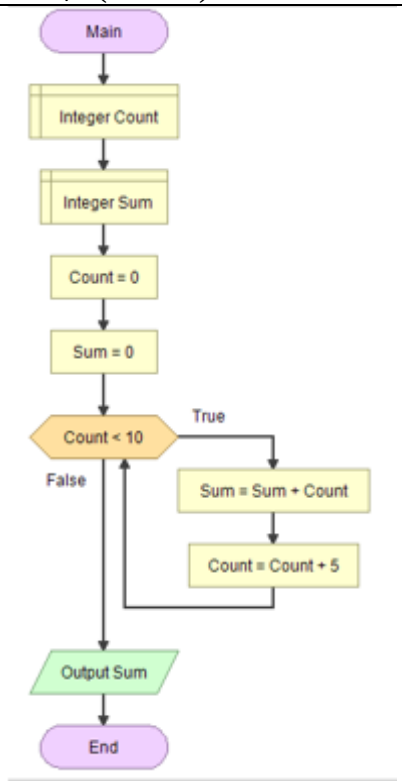
Question 4: (10 Marks)

a. (6 Marks) Draw a flowchart that presents the grade of a student. The program should ask the user to enter the degree and then display the grade according to:
if degree is greater than or equal 95 the program should display "A+",
if degree is greater than or equal 85 and less than 95, the program should display "B+",
if degree is greater than or equal 75 and less than 85, the program should display "C+",
if degree is greater than or equal 60 and less than 75, the program should display "D",
and if degree is less than 60, the program should display "F".

b. Determine the output of the following flowcharts:

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

Good Luck
Dr. Shady Yehia Elmashad