Benha University
Faculty of Engineering (at Shoubra)
Surveying Engineering Department
1ˢᵗ Year

Midterm Exam
Subject: Computer Applications I - SUR 112
Date: Tues 10/11/2015
Duration: 1 hour

№ of Questions: 5 in 1 page(s)
Total Mark: 20

Attempt **all** the following questions:

Question 1:   (**4** Marks)

Choose the best answer:

(1) If x contains the value 3 before the following instruction is executed, what is the value of x after the instruction: x *= 5; is executed?

(a) 15   (b) 5   (c) 8   (d) the statement is illegal

(2) Which of the following is not a legal variable name?

(a) 2Shoubra   (b) fShoubra   (c) X   (d) _Shoubra

(3) The force of gravitational attraction (F) of two bodies is given by a formula in which a constant (G) is multiplied by the product of the two masses (m1 and m2). This is then divided by the square of the distance (d) between the two bodies. Assuming these variables are declared, and have proper initial values where necessary, which of the following C++ statements correctly expresses this formula?

(a) F = G*m1*m2/(d*d);   (b) F = = G*m1*m2/d^2;   (c) G*m1*m2/d*d   (d) a or c is correct

(4) char a='b';   char b='c';   char c=a;   cout<<"a"< <b<<"c" <<a<<"b"<<c;

The output of this program segment is:

(a) accabb   (b) abcabc   (c)accbbb   (d) None of the above

Question 2:   (**4** Marks)

Celsius to Fahrenheit Temperature Converter:

Design a program that converts Celsius temperatures to Fahrenheit temperatures. The formula is as follows:

$$F = C \times 9/5 + 32$$

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

Question 3:   (**4** Marks)

Magic Dates:

The date June 10, 1960, is special because when it is written in the following format, the month times the day equals the year: 6/10/60 Design a program that asks the user to enter a month (in numeric form), a day, and a two-digit year. The program should then determine whether the month times the day equals the year. If so, it should display a message saying "*the date is magic*". Otherwise, it should display a message saying "*the date is not magic*".

Question 4:   (**4** Marks)

Write a program using _switch case_ that reads a character grade (A, B, C, D, or F) and prints the integer GPA (4, 3, 2, 1, and 0 respectively).

Question 5:   (**4** Marks)

Write a C++ program to accept an input from the user and determine whether it is a small character, a capital character, a digit or a special character according to:

ASCII	value ranges
0 - 9	48 - 57
A - Z	65 - 90
a - z	97 - 122
Special Characters	0-47, 58-64, 91-96, 123-127

Good Luck
Dr. Shady Elmashad