2016/01/11

Introduction to Computer Science
Final Test

A. Fill in the blanks in each of the following. (20%)

a. Every C++ program begins execution at the function main.
b. A { begins the body of every function and a } ends the body.
c. Every C++ statement ends with a(n) ;.
d. The escape sequence \n represents the tab character, which causes the cursor to position to the beginning of the next line on the screen.
e. The if statement is used to make decisions.
f. All programs can be written in terms of three types of control structures: selection, sequence and repetition.
g. The if/else selection statement is used to execute one action when a condition is true or a different action when that condition is false.
h. Repeating a set of instructions a specific number of times is called ____ repetition.
i. When it is not known in advance how many times a set of statements will be repeated, a(n) -1 value can be used to terminate the repetition.
j. A key program component in C++ is called body.
k. A function is invoked with a(n) function call.
l. A variable that is known only within the function in which it's defined is called a(n) ____ variable.
m. The return statement in a called function passes the value of an expression back to the calling function.
n. The keyword ____ is used in a function header to indicate that a function does not return a value or to indicate that a function contains no parameters.
o. An identifier's scope is the portion of the program in which the identifier can be used.
p. A(n) ____ allows the compiler to check the number, types and order of the arguments passed to a function.
q. Function rand is used to produce random numbers.
r. Function srand is used to set the random number seed to randomize a program.

B. Match: For each term, write the corresponding letter for the description that best matches it from below. (20%)

1. e Divide-and-conquer
2. k default case
3. c Function call
4. p Repetition
5. a break
6. j setw
7. d continue
8. b Header file
9. f Sticky settings
10. g for
11. h &&
12. q Sequence
13. i ||
14. t Sentinel
15. r double
16. s ++
17. l static_cast< double >
18. m Selection
19. n +=
20. o ?:

a) Causes immediate exit from a repetition statement.
b) Contains function prototypes and definitions of various data types.
c) Invokes a function.
d) Skips to the next iteration in a repetition statement.
e) Technique for constructing a program from smaller, more manageable pieces.
f) Format settings that stay in effect until they are changed.
g) A convenient control statement for performing counter-controlled repetition.
h) Logical AND.
i) Logical OR.
j) Specifies the field width in which the next value output should appear.
k) An optional part of a switch statement.
l) Can be used to create a temporary floating-point copy of its operand.
m) Control structure that is used to choose among alternative courses of action.
n) Addition assignment operator.
o) Conditional operator.
p) Control structure that allows programmers to specify an action to be repeated while some condition is true.
q) Control structure that causes statements to execute in the order in which they appear.
r) A data type for storing floating-point values.
s) Increment operator.
t) Special value which indicates the end of data entry.

C. Write a C++ statement or a set of C++ statements to accomplish each of the following: (10%)

a. Sum the odd integers between 1 and 99 using a **for** statement. Please declare the integer variables *sum* and *count* in the **for** statement.

b. Calculate the value of 2.5 raised to the power 3 using function **pow**. Print the result with a precision of 2 in a field width of 10 positions.

c. Determine whether the value of the variable *count* is greater than 10. If it is, print "Count is greater than 10" else print "Count is less than 10." Use conditional operator to finish the statement.

d. Print the integers from 1 to 20 using a **while** loop and the counter variable x. Assume that the variable x has been declared, but not initialized. Print only 5 integers per line. [Hint: When x % 5 is 0, print a newline character; otherwise, print a tab character.]

e. Repeat question d. by using a **for** statement.

Now hand in the answer sheet, and get the second part of the questions. But before doing that enjoy the followings.

年度最佳鳥新聞
1、三人花20萬人民幣，造出17萬假鈔被警查獲。
2、英國馬拉松，只一人完成比賽，第二名帶著其他五千人跑錯路。
3、在曹操墓發現一具小孩屍骨，專家說，是小時候的曹操。
4、一名韓國MERS女患者從隔離區逃跑，韓國警方根據其外貌一日竟抓捕了500人。
5、一張姓男子偷竊倉庫價值5萬元飲料，連夜將瓶中飲料倒掉，將空瓶賣了200多元。
6、小偷入室偷竊，因怕有腳步聲，脫下鞋子，但腳太臭把屋主薰醒。
7、女子考駕照13年未通過，駕訓班全額退款，並請她吃飯。