University of Toronto, St. George Campus
Department of Computer Science

CSC 165H1 F
Fall 2007

Quiz #4

Name: ________________________ Marker's name: ________________________

Instructions to student: Using pen, write your answers in the space provided and leave the right column blank. *Instructions to marker:* Write only in the right column, and clearly indicate the mark you believe is deserved in each category. Award 1 full mark if answer is fundamentally correct, 0 marks otherwise (no $1/2$ marks).

Consider the following two symbolic statements:

For marking only:

(1) $A(x) \Rightarrow (B(x) \Rightarrow C(x))$

(2) $(A(x) \wedge B(x)) \Rightarrow C(x)$

a. Using any method you want (Venn diagrams, manipulating sentences, logical arithmetic, truth table, direct proof, etc.), prove that (1) implies (2).

2 marks:
1 for strategy,
1 for correctness

b. Using any method you want, prove that (2) implies (1).

2 marks:
1 for strategy,
1 for correctness

c. Write a statement using $\Leftrightarrow$ that summarizes the conclusions of (a.) and (b.).

1 mark: correctness

Total: ________