**COMP 2130, Quiz 1, Winter 2013**

Student Name: Student Number:

1. (1 mark) When an instruction is fetched and executed by CPU, which type address is used? Virtual address or physical address?
2. (1 mark) When an instruction is fetched from the main memory, which type address is used? Virtual address or physical address?
3. (2 marks) Explain briefly why a source program needs to be compiled. Then draw a diagram showing the different phases of the typical compilation system.
4. (2 marks) Explain the two cycles in the instruction cycle.
5. (2 marks) Explain for what cache memory is used.
6. (2 marks) Explain for what the stack and the heap are used.
7. (2 marks) Write the code that assigns a character string “COMP 2130” into an array variable “**course**” with the proper declaration of the array variable.
8. (2 marks) Write a statement to print an integer variable “**abc**”, a float variable “**xyz**”, and the character string stored in the array variable in (7).
9. (3 marks) Write a function that is given an integer value, and returns a TRUE value if the value is even, otherwise the FALSE value.
10. (3 marks) Write a function that is given a list of integer values, and returns the number of even values among them. This function should use the function in (9).