

## QUIZ #05

### CSCI-410 Spring 2013

1. (16pts) Write the VM code for each of the six variants of the test conditional shown. You may assume that all variables exist in the file “example.vm” and are static.

```

if (test)
  c = a
else
  c = b

```

- |                                     |                    |                    |                    |
|-------------------------------------|--------------------|--------------------|--------------------|
|                                     | a) push constant a | b) push constant a | c) push constant a |
| a) <b>(test)</b> is <b>(a EQ b)</b> | push constant b    | push constant b    | push constant b    |
|                                     | eq                 | eq                 | lt                 |
| b) <b>(test)</b> is <b>(a NE b)</b> |                    | not                |                    |
| c) <b>(test)</b> is <b>(a LT b)</b> |                    |                    |                    |
| d) <b>(test)</b> is <b>(a GE b)</b> | d) push constant a | e) push constant a | f) push constant a |
|                                     | push constant b    | push constant b    | push constant b    |
| e) <b>(test)</b> is <b>(a GT b)</b> | lt                 | gt                 | gt                 |
|                                     | not                |                    | not                |
| f) <b>(test)</b> is <b>(a LE b)</b> |                    |                    |                    |

2. (4pts) Write the VM code for the following loop. You may assume that all variables exist in the file “example.vm” and are static.

```

a = -20
b = 10
while (a LE b)
  a = a + b

```

```

push constant -20
push constant 10
label loop
gt
not
if-goto end
add
pop 10
add
goto loop
label end

```