

CSC 207H 2011 L0101 Quiz 2

Duration — 25 minutes

Aids allowed: none

Student Number:

Last Name:

First Name:

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(Please fill out the identification section above and read the instructions below.)

*Good Luck!*

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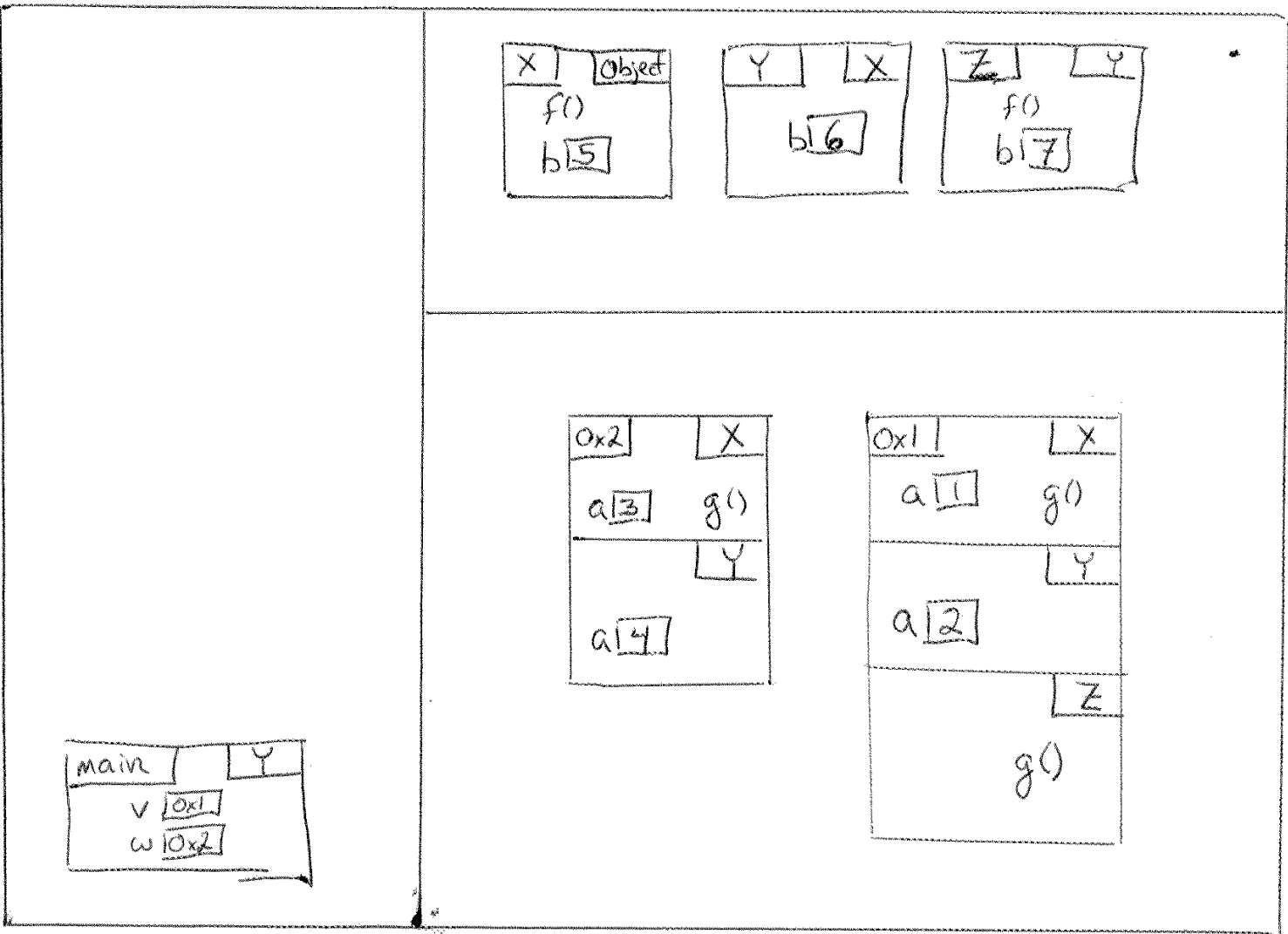
This midterm consists of 2 questions on 6 pages (including this one). *When you receive the signal to start, please make sure that your copy is complete.* If you use any space for rough work or need to scratch out an answer, circle what you want marked to indicate that it is the answer you are submitting.

# 1: \_\_\_\_\_/ 9

# 2: \_\_\_\_\_/ 4

TOTAL: \_\_\_\_\_/13

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**Question 1.** [9 MARKS]

These questions all have to do with the memory model on the opposite page. None of the variables and methods are private.

**Part (a)** [5 MARKS]

If  $v$ 's type is  $Y$ :

- What is the value of  $v.a$ ?
- What is the value of  $v.b$ ?
- If the expression  $v.g()$  is in the **main** method, which method is called?
  - Method  $g$  in the  $0x1$  object, in the  $X$  part.
  - Method  $g$  in the  $0x1$  object, in the  $Z$  part.
  - Method  $g$  in the  $0x2$  object, in the  $X$  part.
  - Method  $g$  in the  $0x2$  object, in the  $Z$  part.
  - None of the above,  $v.g()$  wouldn't compile.
- Which method is called by  $v.f()$ ?
  - The  $f$  in the  $X$  box.
  - The  $f$  in the  $Y$  box.
  - The  $f$  in the  $Z$  box.
  - None of the above,  $v.f()$  wouldn't compile.
- Which method is called by  $((X) v).g()$ ?
  - Method  $g$  in the  $0x1$  object, in the  $X$  part.
  - Method  $g$  in the  $0x1$  object, in the  $Z$  part.
  - Method  $g$  in the  $0x2$  object, in the  $X$  part.
  - Method  $g$  in the  $0x2$  object, in the  $Z$  part.
  - None of the above,  $((X) v).g()$  wouldn't compile.

**Part (b)** [4 MARKS]

If  $w$ 's type is  $X$ :

- What is the value of  $((Y) w).a$ ?
- What is the value of  $w.b$ ?
- If the expression  $w.g()$  is in the **main** method, which method is called?
  - The one in the  $0x1$  object, in the  $X$  part.
  - The one in the  $0x1$  object, in the  $Z$  part.
  - The one in the  $0x2$  object, in the  $X$  part.
  - The one in the  $0x2$  object, in the  $Z$  part.
  - None of the above,  $w.g()$  wouldn't compile.
- Which method is called by  $w.f()$ ?
  - The  $f$  in  $X$ .
  - The  $f$  in  $Y$ .
  - The  $f$  in  $Z$ .
  - None of the above,  $w.f()$  wouldn't compile.

**Question 2.** [4 MARKS]

These are all true/false statements. Check the appropriate box for each.

**Part (a)** [1 MARK]

A **static** method in a class **C** can always make use of a static variable in class **C**, even if both the variable and the method are private.

 True False**Part (b)** [1 MARK]

When you write an interface, you can put a semicolon at the end of the method headers that you don't want to write code for, and you can write code for the bodies of the methods that you know how to implement.

 True False**Part (c)** [1 MARK]

In the call `ref.foo()`, `foo` has to be an instance method.

 True False**Part (d)** [1 MARK]

The following code compiles as long as **C** and **D** are in the same package.

```
class C {           |           class D extends C {
    int i;         |           void m() {
}                 |           this.i = 3;
                 |           }
                 |       }
                 |       }
```

 True False

Use this page for rough work and for any answers that didn't fit.

**Last Name:** \_\_\_\_\_ **First Name:** \_\_\_\_\_