

# Computer Science 161 C

## First Hour Exam

Name \_\_\_\_\_

Friday, Sept. 22  
100 Pts.

I. Some Definitions

Give brief definitions of the following terms. It is not sufficient to simply say what the letters mean (though that will give you some partial credit.)

10 problems at 5 pts. each

ALU

Control Unit

Class

Object

(problem I continued)

Constructor

Accessor method

Instance variable (field)

Formal parameter

(problem I continued)

The **new** command (say what it does)

Local variable

## II Java programming

A note on writing programs on an exam: Usually I ask for full documentation on the programs you write. However, during an exam you do not need to write comments except where I explicitly call for them.

- a. (10 pts.) Consider a class named Employee with instance variables (fields) **name** (a **String**), **hoursWorked** (a **float**) and **rateOfPay** (also a **float** - remember that the data type float stores numbers with decimals). These are private fields. Write the appropriate Class statement to get this started (i.e., everything except for the definition of methods, which follows after this question).

b. (15 pts.) All classes have at least one constructor. Write a constructor for the Employee class which takes an employee name as an argument, places that in the **name** field and which initializes the **hoursWorked** and **rateOfPay** fields to 0.

c. (5 pts.) It is possible to write multiple constructors. What might one which takes the employee name, hours worked, and rate of pay as arguments look like? Write only the **signature** for the constructor - not the code.

- d. (15 pts.) Fill in the details of the following method. The method is to return the gross pay (i.e., before taxes are removed with the following provision: if the hours worked are greater than 40.0, then the hours in excess of 40 are paid at time and a half - that is, at  $1.5 * \text{the normal rate of pay}$ . Use the fields **hoursWorked** and **rateOfPay**.

```
public float grossPay()  
{
```

```
}
```

- e. (5 pts.) Suppose we want to create a new instance of **Employee** with the name "Poirot" in another bit of Java code. Complete the following statement

```
newEmployee =
```