This exam will cover material from Chapter 6, 7, and 8

Here are some general topics for the exam from those chapters:

- method overloading
- calling a superclass constructor from subclass
- static and final
- java.util.List objects
- for-each loop
- intersecting objects (using getOneIntersectingObject method)
- using GreenfootImages and painting our own images
- for-loops
- animation (explosions and smoke examples from class)
- using the mouse to capture user interactions
- (1) What is overloading (specifically method overloading)? When is it used?
- (2) When are static and final used in a variable declaration?
- (3) Write the code to see if an actor is colliding with another (an Obstacle). If there is a collision, the image of the Obstacle should change to "nothreat.png".
- (4) Write the code to create a GreenfootImage with a blue background and five white squares at random locations. The squares should be sized 20x20.
- (5) Use the following for-loop definition to answer parts a d. Parts e & f do not use the same code.

```
for(int count = 1; count < 9; count++) {
   addObject(new Question(), 34, 34);
}</pre>
```

- a) What is the initial value of this loop's counter variable?
- b) What is the value of this loop's counter variable when the loop is done executing?
- c) Circle the part of the code above that is considered the loop body.
- d) How many times would this loop execute?
- (6) Which of the following would be the correct choice to fill in the blank in the code to make this loop execute 5 times?

```
for (int count = 1; _____; count++) {
    //some code for loop
}

a) count < 5
b) count <= 5
c) count < 6
d) count <= 6</pre>
```

- (7) Write the code that gets all the Flowers from the scenario and then moves each flower 5 pixels to its right.
- (8) Write the code so that an actor will follow the movements of the mouse on the world.
- (9) Reproduce the code in the grow() or shrink() methods that we discussed in class that goes through an array of pre-defined images and sets the image of the actor to the next image of the series.