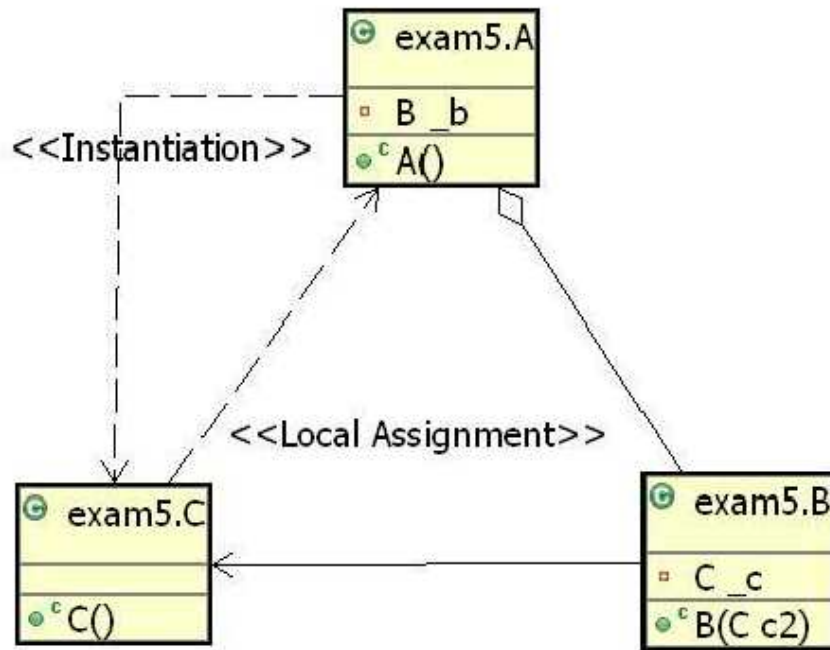


Base your answer to questions 1 through 4 on the following class diagram:



**Question 1** [3 marks]  
Give all classes involved in a *composition* (also called the *has a*) relation. Make sure to tell who *has a* what.

*A has a B*

**Question 2** [3 marks]  
Give all classes involved in a *association* (also called the *knows a*) relation. Make sure to tell who *knows a* what.

*B knows a C*

**Question 3** [3 marks]  
Give all classes involved in an *instantiation dependency* relation. Make sure to tell who *instantiates* what. each class, 1 point for direction of relationship

*A instantiates C*

**Question 4** [3 marks]  
Give all classes involved in an *local variable dependency* relation. Make sure to tell who *instantiates* what. each class, 1 point for direction of relationship

*C instantiates A*

**Question 5****[3 marks]**

Write the code which implements the class named B to match the given UML diagram. Note that this question is focused on the code necessary for the relationship(s) that B has with other classes.

```
public class B {  
    private C _c;  
    public B(C c2) {  
        _c = c2;  
    }  
}
```

SOLUTION #5 — 2.5%

Name (print, surname first): \_\_\_\_\_

Monday, October 8 [version 1 of 4]

Signature: \_\_\_\_\_

15 minutes

Person #: \_\_\_\_\_

 A1 (T@8) A2 (W@4) A3 (R@12) A4 (W@8)

**This assessment has 2 pages. Check that you have a complete paper.**

**Each candidate should be prepared to produce, upon request, his or her SUNY/UB card.**

<b>This examination has 5 questions. Answer all 5 questions.</b>
--

**READ AND OBSERVE THE FOLLOWING RULES:**

*Do not write below this line!*

- ▷ Write the following, in ink, in the space provided above,
  - ◇ your name, surname first,
  - ◇ your usual signature, and
  - ◇ your UB person number,
- ▷ All of your writing must be handed in. This booklet must not be torn or mutilated in any way, and must not be taken from the examination room.
- ▷ Show all of your work in arriving at an answer, unless instructed otherwise. Partial credit will be awarded as appropriate.
- ▷ Candidates are not permitted to ask questions of the invigilators, except in cases of supposed errors or ambiguities in examination questions.
- ▷ **CAUTION** — Candidates guilty of any of the following, or similar, dishonest practices shall be immediately dismissed from the examination and shall be liable to disciplinary action.
  - ◇ Making use of any books, papers or memoranda, calculators or computers, audio or visual cassette players, or other memory aid devices, other than those *explicitly authorised* by the examiners.
  - ◇ Speaking or communicating with other candidates.
  - ◇ Purposely exposing written papers to the view of other candidates. The plea of accident or forgetfulness shall not be received.

Question	Points
1	/3
2	/3
3	/3
4	/3
5	/3
TOTAL	/15