1. What is the software lifecycle?

2. Distinguish an instance from a class (in the context of object-orientation).

3. What is a design pattern? (Indicate level of familiarity from 0-10, with 10 being extremely proficient and 0 being no knowledge.) If applicable, please briefly describe your experience (e.g., which patterns? How large of a system did you design?).

4. With which software architecture styles are you familiar? How did you use them?

5. Have you worked with aspect-oriented programming? (Indicate level of familiarity from 0-10, with 10 being extremely proficient and 0 being no knowledge.) If applicable, please briefly describe your experience.

6. Have you written reusable code? Explain (Who used it? Was it modified?)
7. Have you used reusable code? Explain (Who wrote it? Did you have to modify it?)

8. What is testing? How do you know when you have a successful test? (Indicate level of familiarity from 0-10, with 10 being extremely proficient and 0 being no knowledge.) If applicable, please briefly describe your experience (e.g., what kind of testing did you perform? Unit? Integration? System?); what kind of tools, if any, did you use? Did you test your software or someone else’s?

9. Are you familiar with C++ (what is the largest or most complicated program you have ever developed with C++)?

10. Are you familiar with Java (what is the largest or most complicated program you have ever developed with Java)?

11. What kind of web-based programming have you performed? Which languages? What kind of application?
12. Using an object-oriented modeling language (e.g., OMT, UML, etc.) Draw a class diagram for a book e-commerce system that reflects the following specification.

Offering books for sale and selling them are integral components of any bookstore operation. The objective of BECS (book e-commerce system) is to automate this process. BECS will be used by a manager to enter new items for sale, review current inventory, adjust prices, and enter information about special promotions. BECS will be used by customers to browse current inventory, browse items offered at special prices, and purchase books online (may use a coupon). BECS will help the manager re-order books by notifying her/him when there are only a few books left of any given title. BECS will help the customers by sending email coupons to customers who have elected to create an account and to receive email promotions.
11. Draw a simple sequence diagram that describes how a student would use the SES to enroll in a course. Be sure to show traceability back to the above class diagram.