Week 4 Questions

Lecture 17

1. Yes, because a NI policy is very general. It doesn't constrain subject actions, but specifies which subjects are allowed to "interfere with" which other subjects.
2. Each subject would be on its own because neither dominates the other. There would be no arrows going into or coming out of either subject.
3. If an NI policy encompasses everything, then covert channels cannot exist. This would be a violation of NI policy which says that information cannot flow from H to L.
4. A would be "low" and B would be "high".

Lecture 18

1. NI policies only says L->H. It does not mention any rules regarding objects, subjects, actions; it is very abstract.
2. L1, l2, l3, lk
3. There are many potential interferences in a realistic system.

Lecture 19

1. Integrity is important to ensure that the correct information has been kept intact. For example, a bank would want to make sure that they don't lose money so they must verify that a cashier's check is valid.
2. Purchasing a commercial software would ensure that the program was not created with malicious intentions. A freely available version may allow anyone to edit the program while the commercial version would be overlooked by a company who has the interests of the customer in mind.
3. Separation of duty requires more than one person to complete the function where separation of function requires that different people complete different functions.
4. Auditing allows you to catch a mistake or violation in integrity.
5. People may not be honest about their work and data.
6. You expect a paper you have written to be intact and in the same state as when you last saved it. Confidentiality may not be as important if you expect to share it

Lecture 20

1. The headline of the New York Times about Apple's opposition to federal requests to make a backdoor to their operating system is highly reliable information and not very sensitive. However, some random person telling you when an attack may take place may not be very reliable but that information is very sensitive.
2. Integrity labels are of the same structure as BLP labels so the dominates relation is the same. The higher level with have more or the same categories dominates the other.
3. Information may flow from high to low but not vice-versa.
4. Confidentiality and integrity are orthogonal issues because they are similar but different issues. In confidentiality, you can read down and write up. Where as in integrity, you can read up and write down.

Lecture 21

1. Biba Integrity is called the "dual" of the BLP model because it is the opposite of BLP.
2. The subject and object have the same level but the categories do not dominate each other. Therefore, the subject can neither read or write.

3. No. If both Biba Strict Integrity policy and BLP policy are combined, then the subject must pass the requirements for both confidentiality and integrity to access the object.

Lecture 22

1. Subjects are untrustworthy. They do not have the common sense to figure out if the information is bad or not.
2. No.
3. Yes, the Ring policy assumes that subjects can figure out if they are reading good information or not.
4. Yes.