SENG2250/6250 System and Network Security
Self-Quiz Week 5, Semester 2, 2020

True/False Questions.

1. Access control is a mechanism that limits who can access what system resources in what ways.
    True.

2. The mediation issue of access control considers the balance between the expressiveness (on security policies) and efficiency.
    False. The mediation issue considers: how do you know you have not forgotten some access checks? Usually, we need a way to prove that the design avoids mediation issues. For example, in ACM, it is easy to check.

3. In a computing system, a user can have multiple principals and a principal will be assigned to different users.
    False. A user can have multiple principals, but a principal is associated with a unique principal. A reason is that shared principals are bad for accountability.

4. Access control list is useful for data-oriented protection and capability list is easy to add/delete users.
    True.

5. Bell-LaPadula (BLP) model is a multilevel security access control model which is based on integrity concerns.
    False. The BLP model is based on confidentiality, so it defines "no read up, no write down" rules. These two rules prevent information flow from high-level security to low-level security users.

6. Apply the Biba access control model and show if the following statements are true or false.

    a. Coral cannot read personnel files but can write to Email files.

        False. Coral cannot write to Email files as the files have higher security than Coral.

    b. Bob can read internal documentation, but cannot write to it.

        False. Bob can write to internal documentation as they have the same security level.

Top Secret	Alice (read and write)	Personnel Files
Secret	Bob (read)	Email Files
Secret	Coral (write)	Internal Documentation
Unclassified	Eve (read)	Phone Extension Lists

Assume that once given read and write capabilities, they are applied to all files.

Short-Answer Questions

7. What is the purpose(s) of a reference monitor for access control?

   The reference monitor enforces the access control that is always invoked, tamperproof, and verifiable. It is the basis for validation and represents access control policies. Meanwhile, a reference monitor should provide high performance on access control policy translation and execution.