**CIS 481 – Intro to Information Security**

**CLASS EXERCISE # 9**

Grading ID: N1243

**Problem 1**

Name and describe the four categories of locks based on triggering process (discussed in your text on pp. 508-509). In what situations is each type of lock preferred? (8 pts.)

The first of the four lock types are manual. These locks use a key or combination to manually unlock them. These locks are used to secure areas that don’t require high security locks. The next type of lock are programmable locks which typically use a keypad to enter in a combination that unlocks the door. These locks are used when the combination needs to change frequently, and the mechanical version of this lock triggering system doesn’t require electricity. The third type of lock trigger is electronic. This lock trigger often uses a system to “buzz” the person past the door. This system can be controlled by a security guard and is often used in area where security must be tightly controlled such as a psychic ward. The last type of lock trigger is a biometric trigger. This trigger uses biometrics such as a fingerprint to authorize access. This lock trigger is used when the identity of the accessor must be confirmed before granting access.

**Problem 2**

Your text describes three elements that must be present for a fire to ignite and continue to burn. Newer research suggests a fourth element is required, too. See:  
  
<https://www.firesafe.org.uk/information-about-the-fire-triangletetrahedron-and-combustion/>   
  
Name and describe the four elements of the “fire tetrahedron”. How do fire suppression systems manipulate the four elements to quell fires? (9 pts.)

The first element is heat which acts as an ignition source to start a fire. The next element required is that of oxygen, which is half of the mixture which allows the fire to start burning. The third element is fuel which when combine with oxygen will allow the fire to start burning. The final element is the chemical chain reaction. This reaction is exothermic in nature and is responsible for the thermal radiation given of by the fire. Fire suppression systems put out fires in two ways. The first is the system takes the oxygen out of the air. This method is effective but can be deadly if a human is trapped in the room with the fire. The other way to put out a fire is to remove the fuel source. This can be done by spraying the material with water thereby making it far less flammable.

**Problem 3**

Name and describe the five classes of fire described in the text. Does the class of a fire dictate how to control the fire? How so? (8 pts.)

Class A are fires of normal combustible material such as paper. These fires can be put out with water or any fire extinguisher.

Class B are fires whose fuel is combustible liquids or gases such as gasoline. These fires are put out using carbon dioxide to take the oxygen out of the air.

Class C are fires whose fuel is energized electrical equipment. These fires must be put out by any method other than water. Never use water on an electrical fire

Class D are fires whose fuel is combustible metals such as lithium or magnesium. This fire requires special equipment to put out.

Class K are fires in commercial kitchen whose fuel are fats and cooking only. These fires require carbon dioxide or water mist sprinklers to put out.