CIS 481 – Intro to Information Security

IN-CLASS EXERCISE # 9

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Logistics

A. Get into your regular team
B. Discuss and complete the assignment together. Don't just assign different problems to each teammate! That defeats the purpose of team-based learning.
C. Choose a recorder to prepare the final copy to submit to instructor in Blackboard.

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 four categories of locks are manual, programmable, electronic, and biometric. Manual locks are locks such as key or combination locks, they're set by the manufacturer, and require a locksmith to change, so they usually don't change at all. They're good for lower security situations where you want to keep something locked up, but not bad enough to spring for more expensive lock options. Manual locks are good for lockers and maybe trailers with lower value goods. Programmable locks are those that can be changed by the user, and offer a little more versatility than a manual lock. These are typically simple push-button locks that a found above door knobs, and are great for lower risk areas as they usually have just one code. Electronic locks are locks that unlock either with electronic push-buttons, a smart card, or through manual methods by someone on the other side. You see these a lot in new facilities, they're also more versatile than manual locks and mechanical programmable locks. These would be best used for accessing areas with moderate security requirements. Finally, biometric locks are the most sophisticated. They're good for high security areas as they take measurements of a person's actual physical characteristics such as a fingerprint, palm print, iris, or retina.

Problem 2
What three elements must be present for a fire to ignite and continue to burn? How do fire suppression systems manipulate the three elements to quell fires? (9 pts.)

The three elements needed to be present for a fire to ignite and continue to burn is also known as the fire triangle. This fire ignition and continuation is referred to as a triangle because for a fire to exist it must have all three sides of the triangle present to exist. The first side is oxygen required for oxidization and for . The second side is considered fuel, this is any-thing that can burn, some-things burn easier than others such as carbon based materials. The third and final side to the fire triangle is a heat source, ignition source, or chemical reaction that initiates combustion. Fire suppression systems attempt to eliminate one of the three sides to the fire triangle to extinguish fires. Oxygen and fuel sources are the easiest two sides of the fire triangle to manipulate. Oxygen can be removed with use of Halon systems to extinguish fires to sensitive equipment. Water, sodium bicarbonate, and monoammonium phosphate are used in many fire

extinguishers to smother fuel essentially increasing the fuel's ignition point beyond the heat sources capabilities.

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 - This type of fire involves most carbon materials such as paper, wood, textiles and plastics. Water can be used to lower the temperature of a heat source and smother fuel.

Class B - This type of fire involves flammable liquids like gasoline, oil, paint, and kerosene. Water fails to to smother these types of fuels and does not mix well with others failing to lower heat source temperatures. Instead dirt, sand, and most often monoammonium phosphate are used to smother liquid fires while sodium bicarbonate counteracts the chemical reaction causing the fire.

Class C - This type of fire involves live electrical equipment. Water cannot be used because of its conductive properties. Instead both monoammonium phosphate and sodium bicarbonate are used smother the fuel in proximity to the electrical heat source because of their non-conductive properties.

Class D - This type of fire involves combustible metals like magnesium and titanium. Water cannot be used to extinguish these types of fires, instead a dry powder agent is used to smother the heat source and surrounding fuel in proximity to the ignition source.

Class K - This type of fire involves cooking oils in large kitchens and requires a special extinguishing agent called Purple K.