Name:

**Reading Guide: Toxicology**

**Chapter 8 p 208-219**

35

**The History of Poisons p 208**

1. During the European Renaissance (1300-1700 AD), what were four common forms of poisons?

|  |  |  |
| --- | --- | --- |
| **Plant Based** |  | **Metal Salts** |
| 1. | 2. | 3. |  | 4. |

1. Which branch of science lead to breakthroughs in toxicology in the 1800’s? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (top page 209)

**Elements of Toxicology p 209**

1. Not all poisons affect people the same way. The same poison can even affect people in diverse ways. When considering how a toxin will affect a subject, the text mentions five critical issues you must consider. List them.

|  |
| --- |
| **Effectiveness of Toxins: Five issues to consider…** |
| 1. Dosage
 |
|  |
| 1. The Body weight and physiological condition of the victim: including age & sex
 |
| 4. |
| 1. Weather other chemical are present in the body or in the dose
 |

1. The element arsenic (As) is not very lethal because it cannot survive the stomach acids found in a human stomach. However, if arsenic combines with other elements, it can become lethal. List the forms of arsenic that are lethal
	* 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( ) b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( )

 C. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( )

1. Of the two pairings, which is more susceptible to toxins? Circle the option that will be affect most.

|  |  |  |
| --- | --- | --- |
| 1. Infants
 | **or** | 1. Adults
 |

1. When two substances interact to INCREASE the symptoms is called: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Examples: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. When two substances interact to DECREASE the symptoms is called: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Measuring Toxicity (How lethal is it? P 210)**

1. Explain what LD50 means?
2. When did the US government phase out lethal (LD50) toxin tests on animals? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (page 211 top right)

1. What did a mother do when she found her daughter eating ants? (blue/purple box page 211)
2. How much of Clostridium botulinum would it take to kill every human on earth? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (keep in mind, 1 paper clip is about 1 gram) (blue box page 212)

1. The crazy thing is this toxin is used to make Botox. What is Botox used for?

**8.1 International Espionage p 213**

* Read the case study found in the yellow box. Fill in the summary report below.

**Victim name:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Country of Origin:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Former Occupation:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Cause of death:**

**Potential Motive:**

**Summarize the theory of how he was poisoned**

**Lead Poisoning pg 214**

1. In the United States, which demographic is most at risk for lead poisoning? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. About how many have higher than normal amounts of lead in their body? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. What are the side effects of lead poisoning?
4. What is the most common method of lead exposure? What characteristic of lead makes it dangers to have around children?
5. Spot testing for lead

|  |  |
| --- | --- |
| **Chemical Reaction** | **Color Indicator** |
| Dissolved Lead + sulfide ion |  |
| Lead + sodium rhodizonate |  |

**Other Sources of Lead in the Everyday Environment p217**

1. This paragraph mentions three sources of lead that maybe found in someone’s everyday life. What are those three sources?
	1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ c. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_