# Forensic Toxicology REVIEW

# Student Learning Objectives

At the conclusion of this chapter, the student should be able to:

**Toxicology**

1. Define toxicology.

2. Discuss the role of forensic toxicologist in their efforts to

 a. determine the effect of a drug

 b. establish a cause and effect of the drug

 c. develop treatments

 d. develop techniques to detect the drug or toxin

3. What five things does the toxicity of a drug or poison depend on:

 a.

 b.

 c.

 d.

 e.

4. Give four examples of methods in which drugs or poisons can be administered:

 a.

 b.

 c.

 d.

5. Differentiate between presumptive testing for a drug and a definitive(confirmatory) test:

6. Distinguish between qualitative testing versus quantitative testing

7. Describe the following types of presumptive drug tests:

 a. color test

 b. microscopic examination of plant matter

 c. microcrystalline test

8. Describe the role of each of the following tests performed in confirmatory drug testing:

 a. gas chromatography

 b. mass spectrometry

 c. TLC

**Evidence**

9. Describe the proper method used to collect drug evidence if the evidence is in

 a. pills

 b. liquids

 c. botanical materials such as leaves or mushrooms

 d. crystals

 e. embedded in food, paper, or candy

 f. syringes

10. Justify why moist drug evidence should be packaged in paper bags and not plastic bags.

11. Distinguish between a toxin and a poison.

13.Describe three different ways people can be exposed to heavy metals.

14. Distinguish between acute and chronic poisoning.

15. Describe which heavy metal toxins are accidentally ingested by:

 a. drinking water

 b. ingestion of old paint chips

 c. ingestion of fish caught in polluted water

16. Describe the toxic effect of carbon monoxide found in automobile exhaust on the body.

**Poisons and LD50**

1. List 3 examples of substances that are beneficial in small quantities, but poisonous in larger doses.
2. Name three properties of toxins that influence its effect on the body.
3. What is an LD50? Based on this definition, what do you think a LD100 means?
4. What is the role of a toxicologist?
5. What types of testing can a toxicologist perform?

**Answer the following questions using your LD50 handout. Show your answers in mg, g, and kg.**

1. What is the estimated dosage needed to kill a 160 pound person based on the LD50 of sodium chloride?
2. What is the estimated dosage needed to kill a 125 pound person based on the LD50 of botulin toxin?
3. What is the estimated dosage needed to kill a 210 pound person based on the LD50 of nicotine?

**Nuclear:**

know the three types of nuclear radiation that we have discussed

complete nuclear equations

calculate mass remaining if half life and initial mass are given

Chernobyl and Alexander Litvinenko