**Assignments posted in canvas.**

**Toxicology open book test posted in canvas-01/24/2025**

**Forensic file analysis-01/23/2025**

Students will watch Forensic case video and complete forensic file analysis worksheet

**Toxicology Review quizziz link-01/22/2025**

Review quizziz link posted in canvas

**Toxicology Study Guide-01/21/2025**

Complete the sections below to reinforce your understanding of toxicology within forensic science. Use your class notes, textbook, and other provided resources to answer the questions.

**Section 1: Key Concepts in Toxicology**

1. **Definition of Toxicology**
   * What is toxicology? Define the term in your own words.
   * Why is toxicology important in forensic science?
2. **Types of Toxic Substances**
   * List and describe the three main types of toxic substances.
     + Example: **Biological toxins** (e.g., toxins from plants or animals).
3. **Dose-Response Relationship**
   * What is the dose-response relationship, and why is it significant in toxicology?
   * Explain the difference between acute and chronic toxicity.
4. **Factors Affecting Toxicity**
   * Name and briefly describe three factors that influence the toxicity of a substance.

**Section 2: Forensic Toxicology Procedures**

1. **Purpose of Forensic Toxicology**
   * What is the primary goal of forensic toxicology in criminal investigations?
2. **Sample Collection**
   * What types of biological samples are commonly used in forensic toxicology (e.g., blood, urine)?
   * Why is chain of custody important during sample collection?
3. **Analytical Techniques**
   * Identify and describe two common analytical techniques used in toxicology labs (e.g., gas chromatography, mass spectrometry).
   * Provide an example of when each technique might be used.

**Section 3: Toxic Agents and Their Effects**

1. **Classification of Poisons**
   * Fill in the table below with examples and effects of different classes of poisons:

|  |  |  |
| --- | --- | --- |
| **Class of Poison** | **Example** | **Effect on the Body** |
| Heavy Metals |  |  |
| Pesticides |  |  |
| Pharmaceuticals |  |  |
| Biological Toxins |  |  |

1. **Symptoms of Poisoning**
   * Match the following symptoms with their potential toxic agent:
     + Symptoms: Convulsions, difficulty breathing, liver failure.
     + Toxic Agents: Cyanide, organophosphates, acetaminophen overdose.

**Section 4: Case Studies and Application**

1. **Case Study Analysis**
   * Read the following case study and answer the questions:
     + **Case:** A 35-year-old male is found unresponsive at home. A vial labeled “Methanol” is discovered nearby. Autopsy reveals metabolic acidosis.
       1. What toxic substance is suspected?
       2. What biological sample would be most helpful to confirm the presence of this toxin?
       3. What treatment might have been used if the individual had been found alive?
2. **Famous Toxicology Cases**
   * Research and summarize one well-known case where forensic toxicology played a critical role in solving a crime (e.g., the Tylenol murders, Napoleon Bonaparte’s death).

**Section 5: Ethical Considerations in Forensic Toxicology**

1. **Privacy and Consent**
   * Why is obtaining proper consent and maintaining privacy essential in forensic toxicology?
2. **Challenges in Interpretation**
   * Describe one ethical challenge toxicologists might face when interpreting toxicology results in a legal context.

**Reflection**

1. What aspect of toxicology do you find most interesting, and why?
2. How do you think advancements in technology will influence the field of forensic toxicology in the future?

**Instructions:**

* Complete all sections using detailed and accurate information.
* Ensure your answers are in your own words.
* Submit your completed study guide by the due date.