

Forensic Chemistry and Toxicology (and associated labs) Study Sheet

You can complete the following review for 5% extra credit toward the Unit 6 Exam. Must be completed IN YOUR OWN HANDWRITING and turned in on test day.

Forensic Chemistry

1. What is the job of a Forensic Chemist? What unit would they likely work under?
2. What is the definition of a drug?
3. What is the difference between a controlled substance and an illegal drug?
4. What is the difference between psychological and physical dependence?
5. **How** are drugs classified? **What** are the drug classifications? Understand the common characteristics of the drugs in each class.
6. What is the Controlled Substance Act? Compare and Contrast drugs that are on Schedule I, II, or III-V.
7. What is the difference between a presumptive and a confirmation test?
8. Give two examples of presumptive tests. What is a false positive?
9. What is chromatography? Give two types that we discussed that are used to identify drugs. Are they presumptive or confirmation tests? Understand how to read the gas chromatographs (worksheet).
10. What is a retention factor? How do you calculate it?
11. What is retention time?
12. What is mass spectrometry? Is it a presumptive or confirmation test? How is it used to test for drugs? Understand how to read the mass spectrographs (worksheet).
13. What are UV and visible spectrophotometry? Are they presumptive or confirmation tests? Why?
14. What is infrared spectrophotometry? Is it a presumptive or confirmation test? Why?

Forensic Toxicology

15. Who is the "Father of Forensic Toxicology"?
16. What is toxicology? What is *forensic* toxicology?
17. Why is toxicology important to forensic science?
18. What is a poison? A toxin? (make sure you understand the difference between a "generic" definition of each and the **scientific** definition.). What is an intoxicant?

19. How are toxins classified?
20. What are some factors that affect toxicity?
21. What is an LD50?
22. What is the most common poison? What are some biological toxins?
23. How is % saturation of carbon monoxide used to determine if a death was caused by a fire or if the person was dead before the fire started?
24. Describe the steps of metabolism. (how it enters → how it exits)
25. What is the difference between metabolism and a metabolite?
26. What samples would a forensic toxicologist use to assess the presence of toxins?
27. Describe an immunoassay. What body sample is it used to test?
28. How are metals identified? What body sample would most likely show metals?
29. What confirmation test do forensic toxicologist typically use to identify a substance?
30. What is tolerance? Why is this information important for determining cause of death?
31. What is the difference between a normal, therapeutic, toxic, and lethal level of drugs?
32. Who makes the final determination of the cause of death?

Alcohol

33. What is alcohol?
34. Describe metabolism of alcohol. What are some factors that affect how it is absorbed?
35. What is the function of the liver in alcohol metabolism?
36. What is the difference between oxidation and excretion of alcohol?
37. What is the purpose of field tests? What is nystagmus?
38. Describe three different methods for measuring alcohol in the breath.
39. What is blood alcohol content? What are the limits? How is it calculated for men vs women?
40. What techniques are used to determine BAC from blood and urine?

Alcohol and the Law

41. What is implied consent?
42. What important verdict came out of *Schmerber v. California*? What amendments to the Bill of Rights were affected by this verdict?