H Forensic Science

Unit 2A Study Guide

Fingerprints

1. What is the difference between direct and circumstantial evidence?
2. Which layer of the skin creates fingerprints?
3. When do fingerprints form on a person?
4. Is there any case in which two people can have the exact same fingerprint? Explain.
5. Can a person permanently alter their fingerprints? Why or why not?
6. Are fingerprints individual or class evidence?
7. What is the 1st principle of fingerprints?
8. What is the 2nd principle of fingerprints?
9. What is the 3rd principle of fingerprints?
10. What are the 3 types of fingerprints? Which is most common and which is least common?
11. How can you tell the 3 types of fingerprints apart?
12. What are fingerprint minutiae?
13. How do you perform a ridge count?
14. Determine the type of fingerprints and identify 12 minutiae on each print. Do a ridge count on the first print.
	1. 
	2. 
15. Determine if these prints match by matching 12 minutiae and completing a ridge count on both.
	1.  
16. What is AFIS?
17. Describe the 3 types of fingerprints that can be left at a crime scene.
18. What methods can be used to visualize latent prints? Which method is the preferred method used by investigators?
19. Is fingerprint matching a perfect method to identify a person? Why or why not?

Hair

1. What is hair made of?
2. How does hair grow? Describe the 3 stages of hair growth.
3. Describe the 3 parts of a hair strand.
4. What is a medullary index and how is it used to distinguish between human and animal hair?
5. What is a follicular tag and why is it useful to investigators?
6. Is hair individual or class evidence? Explain.





1. Use the pictures above to answer the questions.
	1. Are these hairs from the same head? Why or why not? 
	2. Is these hairs from a human or an animal? How can you tell? 
	3. What types of cuticle are these and what does that tell you about the hair?



Fibers

1. What distinguishes a fiber as natural? Where do natural fibers originate from? Give 2 examples of each.
2. What distinguishes a fiber as synthetic? Give examples.
3. What two main characteristics would an investigator look for in matching fibers under a microscope?
4. How do investigators use a burn chart when completing a burn analysis on fibers?
5. Use the burn chart to determine the identity of the fibers described below.
	1. This fiber is self-extinguishing, and it chars with the smell of burning hair. It has an open, lace-like ash.
	2. This fiber is not self-extinguishing, and it melts with the earthy smell of turmeric and a soft, black irregular ash.
	3. This fiber is not self-extinguishing and chars with the smell of burning grass and a soft gray ash.
	4. This fiber is self-extinguishing and melts with the odor of burning asphalt and a hard, tan bead.