Unit 3-Hair and Fiber Review

Match the definition on the right with the word on the left.

1. Hair shaft
2. Hair cuticle
3. Hair cortex
4. Hair medulla
5. Coronal scales
6. Spinous scales
7. Imbricate scales
8. Hair root
9. Hair follicle
10. Anagen phase
11. Catagen phase
12. Telogen phase

A. The middle layer of the hair shaft, made up of keratin molecules and pigment.
B. Portion of the hair below the skin that is embedded in the follicle.
C. The intermediate phase of hair growth where the outer sheath shrinks.
D. Portion of the hair above the surface of the skin, made up of three layers.
E. Scale pattern that looks petal-like.
F. Tube like organ in the under layer of the dermis and is linked to the body’s blood supply.
G. Scale pattern where the layers are flattened against each other.
H. The active phase of hair growth where hair is growing about 1 cm per month.
I. A row of cells running along the center of the shaft.
J. Scale pattern that looks crown-like.
K. The resting phase of hair growth, where the hair spends the majority of its life.
L. The clear outer covering of the hair shaft, made up of overlapping scales.

Answer the following questions.

1. What is Locard’s Exchange principle? How does it apply to the collection of hair and fiber evidence?

2. Label the parts of the hair in the diagram below. (Follicle, Papilla, Root, Shaft)
3. Label the three parts of the hair shaft below.

4. What are you looking for in the cortex of the hair?

5. What are the three main cuticle patterns?
   a. 
   b. 
   c. 

6. Identify the scale pattern in the following pictures.

7. Draw a picture of the following medullary patterns.

<table>
<thead>
<tr>
<th>Medulla Type</th>
<th>Picture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Fragmentary</td>
<td></td>
</tr>
<tr>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td>Stacked</td>
<td></td>
</tr>
</tbody>
</table>

8. How do you tell the difference between a solid medulla and a continuous medulla?

9. How do you tell the difference between a fragmented and interrupted medulla?
10. What is the medullary index and why is it important when identifying hairs?

11. What type of information can you tell about a person by looking at a hair under the microscope?

12. What part of the hair are you looking at when trying to determine if it was pulled out or fell out naturally? What will each look like?

13. What type of information can't you tell about a person by looking at a hair under the microscope?

14. How can you tell if a fiber is natural or synthetic?

15. Label the following weave patterns.

16. Label the weft and warp in the previous diagrams.

17. How can you tell the difference between a twill weave and a satin weave?

18. What makes a fiber valuable as evidence?