Chapter 8 – Review Questions

Directions: Fill in the blank with word or term that best completes the statements or answers the questions below; circle the word TRUE if the statement is true, FALSE if the statement is false; circle the given word to make the statement correct. (1 point each)

1. Hair is an appendage of the skin, growing out of an organ known as the ____________________.

2. The three layers of the hair shaft are the ____________________, the ____________________, and the ____________________.

3. TRUE or FALSE: The scales of most animal hairs can be described as looking like shingles on a roof. ____________________

4. The ____________________ contains the pigment granules that impart color to hair.

5. The central canal running through many hairs is known as the ____________________.

6. The diameter of the medulla relative to the diameter of the hair shaft is the ____________________.

7. Human hair generally has a medullary index of less than ____________________; the hair of most animals has an index of ____________________ or greater.

8. Human head hairs generally exhibit (continuous, absent) medullae.

9. If a medulla exhibits a patterned shape, the hair is (human, animal) in origin.

10. The three stages of hair growth are the ____________________, ____________________, and ____________________ phases.

11. A single hair (can, cannot) be individualized to one person by microscopic examination.

12. In the hair comparisons, it is best to view the hairs side by side under a(n) ____________________ microscope.

13. ____________________ hairs are short and curly, with wide variation in shaft diameter.

14. It (is, is not) possible to determine when hair was last bleached or dyed.

15. TRUE or FALSE: The age and sex of the individual from whom a hair sample has been taken can be determined through an examination of the hair’s morphological features. ____________________
16. Hair forcibly removed from the body (always, often) has follicular tissue adhering to its root.

17. Microscopic hair comparisons must be regarded by police and courts as presumptive in nature, and all positive microscopical hair comparisons must be confirmed by __________________________ typing.

18. TRUE or FALSE: Currently, DNA typing can individualize a single hair. __________________

19. A(n) __________________________ hair root is a likely candidate for DNA typing.

20. A minimum collection of __________________________ full-length hairs normally ensures a representative sampling of head hair.

21. A minimum collection of __________________________ full-length pubic hairs is recommended to cover the range of characteristics present in this region of the body.

22. __________________________ fibers are derived totally from animal or plant sources.

23. The most prevalent natural plant fiber is __________________________.

24. TRUE or FALSE: Regenerated fibers, such as rayon and acetate, are manufactured by chemically treating cellulose and passing it through a spinneret. __________________________

25. Fibers manufactured solely from synthetic chemicals are classified as __________________________.

26. TRUE or FALSE: Polyester was the first synthetic fiber. __________________________

27. ______________ are composed of a large number of atoms arranged in repeating units.

28. The basic unit of the polymer is called the __________________________.

29. __________________________ are polymers composed of thousands of amino acids linked in a highly organized arrangement and sequence.

30. TRUE or FALSE: A first step in the forensic examination of fibers is to compare color and diameter. __________________________

31. The microspectrophotometer employing __________________________ light is a convenient way for analysts to compare the colors of fibers through spectral patterns.

32. The dye components removed from fibers can be separated and compared by __________________________ chromatography.
33. Synthetic fibers possess the physical property of _______________ because they are crystalline.

34. The microspectrophotometer employing ________________ light provides a rapid and reliable method for identifying the generic class of a single fiber.

35. Normally, fibers possess (individual, class) characteristics.

36. The two most important components of dried paint from the criminalist’s point of view are the _________________ and the _________________.

37. The most important physical property of paint in a forensic comparison is _________________.

38. Paints can be individualized to a single source only when they have a sufficiently detailed _________________.

39. The _________________ layer provides corrosion resistance for the automobile.

40. “Eye appeal” of the automobile comes from the _________________ layer.

41. Pyrolysis gas chromatography is a particularly valuable technique for characterizing paint’s (binder, pigments).

42. Emission spectroscopy can be used to identify the (inorganic, organic) components of paint’s pigments.

43. TRUE or FALSE: Paint samples removed for examination must always include all of the paint layers.