why study NAIL STRUCTURE AND GROWTH?

1. List three reasons why cosmetologists should study and have a thorough understanding of nail structure and growth.
   1) 
   
   2) 
   
   3) 

Distinguish the Structure of the Natural Nail

2. The ________________ is the hard protective plate composed mainly of keratin, the fiber-shaped protein found in skin and hair, which is located at the end of the finger or toe.

3. Natural nails are appendages of the skin and part of the ________________ system, which is made up of the skin and its various organs.

4. Nail plates protect the tips of the fingers and toes, and their appearance can reflect the ________________ of the body.

5. Another name for the natural nail is the ________________.

6. The natural nail is composed mainly of a protein called ________________.
7. The keratin found in the natural nail is not as hard as the keratin found in the hair or skin. 
   _____ a) True  _____ b) False

8. Describe the appearance of a healthy nail. ________________________________
   ________________________________
   ________________________________

9. A healthy nail may look dry and hard, but its water content is actually between _____, and varies according to the relative humidity of the surrounding environment.
   _____ a) 5 and 10 percent  _____ c) 15 and 25 percent
   _____ b) 10 and 20 percent  _____ d) 20 and 30 percent

10. The water content directly affects the nail's ___________; the lower the water content the more ______________ the nail becomes.

11. What can be done to reduce water loss and improve flexibility?

   ________________________________

**Identify Nail Anatomy**

12. How many main parts is the natural nail unit divided into?
   _____ a) Five  _____ b) Six  _____ c) Seven  _____ d) Nine

13. Together, all of the main parts of the nail are referred to as the ____________________.

14. Identify the parts of the nail as illustrated below:

   ________________________________
   ________________________________
15. The nail plate is relatively __________ and will allow water to pass through it much more easily than through normal skin of an equal thickness.

16. The ________________ is the most visible and functional part of the nail unit. It is constructed of about ________________ layers of nail cells.

17. The part of the nail plate that extends over the tip of the finger or toe is the ________________.

18. Which of the following best describes the nail plate?
   _____ a) Soft  _____ c) Dry
   _____ b) Porous  _____ d) Dormant

19. The ________________ is the portion of living skin that supports the nail plate as it grows toward the free edge.

20. The nail bed contains many nerves, and is attached to the nail plate by a thin layer of tissue called the ________________.

21. The ________________ is the area where the nail plate cells are formed.

22. The visible part of the matrix that extends from underneath the living skin is called the ________________.

23. Every nail has a lunula.
   _____ True  _____ False

24. The whitish color of the lunula is caused by the ________________ off the surface of the visible part of the underlying matrix.

25. Why is it sometimes difficult to see a lunula? ________________________________

26. Growth and appearance of the nails can be affected if any of the following conditions exist:
   a) ________________________________
   b) ________________________________
   c) ________________________________

27. The ________________ is the dead, colorless tissue attached to the natural nail plate.

28. What is the purpose of the cuticle? ________________________________

______________________________
29. Which of the following best describes the cuticle?
   _____ a) Alive          _____ c) Difficult to remove
   _____ b) Pigmented      _____ d) Unimportant

30. Which of the following is most likely to need a softener?
   _____ a) Cuticle         _____ b) Eponychium

31. The living skin at the base of the natural nail plate covering the matrix area is the
   ________________________.

32. Describe the difference between the eponychium and the cuticle.
   ____________________________________________________________

33. The cuticle will bleed if it is cut.
   _____ True          _____ False

34. Which of the following can be removed with gentle scraping?
   _____ a) Cuticle       _____ b) Eponychium

35. The_____________________________ is the slightly thickened layer of skin under the nail that lies
    between the fingertip and the free edge of the nail plate.

36. What is the function of the hyponychium?
   ____________________________________________________________

37. A tough band of fibrous tissue that connects bones or holds an organ in place is called
    a ____________________.

38. Specialized ligaments attach the nail bed and _______________________ to the
    underlying bone and are located at the base of the matrix and around the edges of the
    nail bed.

39. The________________________ are folds of normal skin that surround the nail plate and which
    form nail grooves.

40. What are nail grooves? ____________________________________________

41. The fold of skin that overlaps the side of the nail is called the _____________.

Discuss Nail Growth

42. The growth and health of the nail plate is affected by ____________________________

43. Describe services a cosmetologist may perform to help make a client's nail plate thicker. ____________________________

44. Explain why toenails are thicker than fingernails. ____________________________

45. Identify the various shapes of nails in the illustration below:

46. The average rate of nail plate growth in the normal adult is about:
   a) $\frac{1}{4}$ to $\frac{1}{2}$ inch per month.  b) $\frac{1}{2}$ to $\frac{3}{4}$ inch per week.
   c) $\frac{1}{10}$ to $\frac{1}{8}$ inch per month.  d) $\frac{1}{6}$ to $\frac{1}{10}$ inch per week.

47. Nails grow faster in the winter than they do in the summer.
   ______ True    ______ False

48. Compared with the nails of an average adult, children's nails grow more rapidly, while elderly adults' nails grow at a slower rate.
   ______ True    ______ False

49. The nail of the middle finger grows fastest and the thumbnail grows the slowest.
   ______ True    ______ False
50. What causes the growth rates of the nail to increase dramatically during pregnancy?

51. A pregnant woman who is taking prenatal vitamins will experience even more rapid nail growth than a pregnant women who is not taking prenatal vitamins.
   ______ True     ______ False

52. What will cause an abnormal shape or form of the nail?

53. How long does replacement of the natural fingernail take?

54. Toenails take ______ months to be fully replaced.
   ______ a) three to five    ______ c) seven to nine
   ______ b) five to seven    ______ d) nine to twelve

55. Like hair, the nail will automatically shed periodically.
   ______ True     ______ False

Know Your Nails

56. A licensed cosmetologist is allowed to:
   ______ treat nail disorders.
   ______ remove ingrown toenails.
   ______ work on healthy nails only.

57. The act of typing on a keyboard or lightly touching natural nails on piano keys stimulates the nails and makes them grow. Why do you think this is the case? Once you have considered your answer, find out if you are correct by conducting an Internet search on the topic.