Cells and Tissues Review

1. The whip-like cellular extensions that move substances along the cell are called _____.
2. There are two types of bulk transport; the type that moves substances *into* the cell is called _____.
3. The mitotic spindle is formed by cellular organelles called _____.
4. When the epithelial tissue consists of cells that are flattened like fish scales, it is called _____ epithelium.
5. List the four essential functions of epithelial tissue.
6. What two types of cell populations make up neural tissue, and what is the primary function of each type?
7. List the different types of connective tissue.
8. What is the functional difference between microvilli and cilia on the free surface of epithelial tissue?
9. Ribosomes assemble in the _____ prior to their migration into the cytoplasm.
10. Cholesterol synthesis and breakdown takes place in the _____.
11. _____ epithelium consists of one layer of epithelial cells.
12. List the three different types of RNA and identify their functions.
13. Describe the four stages of mitosis.
14. Identify the four main components of the plasma membrane and state their functions.
15. Describe the steps in protein synthesis.
16. Glands, such as the thyroid, that secrete their products directly into the blood rather than through ducts are classified as _____.
17. The type of muscle tissue that is found in the walls of blood vessels is _____.
18. Which tissue contains intercalated disks?
19. Tendons are composed of which connective tissue type?
20. Which tissue has a matrix that consists of rows of fibroblasts that manufacture collagen fibers?
21. Which tissue is usually well vascularized and has an extensive intercellular matrix?
22. Epithelial tissue that consists of cells that vary in appearance at the free surface, so that when the organ is contracted the tissue is thinner than when the wall is stretched, is called _____.
23. The tissue that is found lining body organs, covering the body surface, and in glandular tissue is _____.
24. Goblet cells are found in _____.
25. If the sequence of nitrogenous bases in one strand of DNA is GTA-GCA, the sequence of bases on its complementary DNA strand would be _____.
26. A red blood cell placed in pure water would _____.
27. The nucleic acid responsible for bringing the amino acids to the "factory" site for protein formation is the _____.
28. Microvilli are apt to be found in cells that are specialized for _____.
29. The system of fluid-filled canals coiling and twisting through the cytoplasm is called the _____.
30. The site where ribosomes assemble prior to their migration into the cytoplasm is the _____.
31. Which cellular structure functions in detoxifying a number of harmful or poisonous substances, such as alcohol and formaldehyde?
32. The endoplasmic reticulum provides a tubular _____ system inside the cell.
    1. Why does the RER appear rough?
    2. What does it function in the synthesis and transport of?
    3. Why does the SER appear smooth?
    4. What does it function in the transport of?
33. Where are ribosomes found?
34. What are ribosomes composed of?
35. What do ribosomes help in the production of?
36. The golgi apparatus is composed of flattened _____ and it packages the cells products.
37. Lysosomes contain digestive enzymes to break up old cell components and bacteria.
38. The only substance that is moved by osmosis is _____.
39. What substances diffuse in the human body? _____
40. Facilitated diffusion uses membrane proteins that function as _____ to move molecules (such as glucose) across the cell membrane.
41. Active transport is the movement of substances from an area of _____ concentration to an area of _____ concentration. It requires _____ proteins: (pumps) and energy in the form of _____.
42. Interphase is a period of great metabolic activity in which the cell _____ and _____ new molecules and organelles. During the S phase of interphase, the _____ of the cell is replicated in preparation for cell division.

43. What disappears during prophase?
44. What appears or becomes visible during prophase?
45. Why is metaphase the easiest to see on a microscope slide? (hint, what are the chromosomes doing?)
46. What characterizes anaphase?
47. What reappears during telophase?
48. Loose connective tissue has cells called _____, plus fibers made from _____ and _____. It binds the skin to underlying organs.
49. Tendons and ligaments are made up of _____ _____ tissue. They do not heal readily because they lack a direct _____ supply.
50. _____ cartilage can be found at the ends of bones and makes up the fetal skeleton. In it, cells lie within _____ surrounded by a gel-like _____.
51. The type of cartilage found in the ear, called _____ cartilage, has many _____ fibers to add flexibility. _____ found in the intervertebral disks, aids in cushioning against jolts.
52. Nerve cells are called _____. They have a(n) _____ containing the nucleus, and a long _____ carrying impulses away from the cell. Numerous _____ carry incoming signals. _____ are the helper cells of the nervous system.
53. What type of tissue is found lining body organs, covering body surfaces, and in glandular tissues?
54. What type of epithelial tissue consists of cells that are flattened like fish scales?
55. What type of muscle tissue can be controlled voluntarily?
56. Identify the labeled structures.