Name:__________________________________________________________

Laboratory Time:________________________________________________

Instructions:

1. Block out the correct letter on the answer sheet after carefully reading the question. Use #2 or soft pencil to mark your answer sheet. When erasing, make sure the erasure is complete and clean, otherwise, the computer will mark you answer wrong.

2. Write your ID Number on the answer sheet.

3. Write your name on the test and the answer sheet.

4. Do your own work!

5. Only one letter answer is correct

6. There are a total of 25 questions, worth 2 points each, for a total of 50 points.
Match the below-listed terms with the statements in questions No. 1 through 5. The listed answers can be used once, several times, or not used at all.

a. cholesterol
b. cytosol
c. phospholipid bilayer
d. facilitated diffusion
e. microfilaments

1. Forms part of the cytoskeleton of the cell.
2. The substance in which are found cell organelles
3. Cell membrane will lose stiffness or firmness without it
4. Is the major component of a cell membrane
5. Describes transport across cell membrane with a carrier or transporter

6. The integral proteins can function in all of the following ways in the cells except as:
   a. cell membrane stiffeners
   b. transporters or carriers
   c. cell identity markers
   d. membrane receptors

7. The membrane-enclosed vesicles in the cell cytoplasm that have powerful hydrolytic enzymes for digesting foreign material are called:
   a. proteins
   b. transport vesicles
   c. lysosomes
   d. secretory vesicles
   e. inclusions

8. Phagocytosis means:
   a. endocytosis that involves uptake of tiny droplets of fluid
   b. endocytosis of both solid and fluid material
   c. endocytosis that involves intake of solid material
   d. receptor-mediated intake of material into the cell

9. Which statement is true about the epithelium?
   a. the tissue has an extensive blood supply
   b. this tissue functions in protection, secretion, absorption
   c. the cells are arranged in a single layer
   d. attachment sites between epithelial cells are called hemidesmosomes
10. The cytoplasm of most cells contains a variety of essential organelles. If the number of these organelles in a given cell is reduced, the cell is most likely inactive or in a resting state.
   a. both sentences are correct
   b. both sentences are false
   c. first sentence is true but the second sentence is false
   d. first sentence is false but the second sentence is true

11. Connective tissue cells that ingest foreign-body or bacteria are called:
   a. plasma cells
   b. macrophages
   c. mast cells
   d. fibroblasts
   e. stem cells

12. Muscle tissue that forms the wall of an intestine or uterus is:
   a. striated and voluntary
   b. striated and involuntary
   c. smooth and voluntary
   d. smooth and involuntary
   e. both smooth and striated

13. Which of the following influences the diffusion rate of a substance into the cell?
   a. concentration gradient
   b. size of the molecule
   c. presence of transporter or carrier molecule
   d. lipid solubility
   e. all of the above

14. Certain cells, such as cardiac muscle cells, exhibit structures in their membranes that allow for rapid passage of information between them. These structures are called:
   a. pores
   b. gap junctions
   c. integral proteins
   d. tight junctions
   e. desmosomes

15. In a metabolically active cell, the direction for concentration gradient of glucose would be:
   a. from inside to outside of the cell
   b. from outside to inside of the cell
   c. from outside and inside of the cell, depending where more glucose is accumulated
   d. difficult to determine
16 Which epithelium is best suited for diffusion?
   a. columnar
   b. stratified
   c. transitional
   d. simple squamous

17 What surrounds the fast conducting axons in a neuron?
   a. microvilli
   b. fibroblasts
   c. myelin sheath
   d. connective tissue layer
   e. elastic fibers

18 Which word combination concerning cartilage, bone, and connective tissue is NOT correct?
   a. perichondrium - chondroblasts
   b. mesenchyme cells – connective tissue cells
   c. periosteum – cartilage
   d. intramembranous ossification - skull bone
   e. dense regular connective tissue - tendons

19 What indicates that the primary center of ossification and secondary center of ossification has fused and the bone growth in length is terminated?
   a. epiphyseal line
   b. nutrient foramen
   c. epiphyseal plate
   d. bone marrow

20 When a bone is broken, the healing process begins first by the formation:
   a. soft bony material
   b. intramembranous bone
   c. dense connective tissue
   d. fibrocartilage model

21 The muscle that is found in the wall of the heart is:
   a. involuntary, striated
   b. involuntary, non-striated
   c. voluntary, striated
   d. involuntary, smooth

22 The striated appearance of each skeletal muscle fiber is due to the:
   a. sarcoplasmic reticulum
   b. actin and myosin arrangement in the sarcomere
   c. regular myofiber arrangement in the muscle
   d. regular T-tubules alignment in the sarcomere
   e. dense regular connective tissue fibers
23 Calcium is released from this structure in the skeletal muscle fibers.
   a. sacoplasmic reticulum
   b. sarcolemma
   c. T-tubules
   d. sarcomere
   e. microtubule

24 This structure is responsible for stabilizing the myosin filaments in the sarcomere:
   a. elastic fibers
   b. tropomyosin
   c. actin
   d. myosin heads
   e. titin

25 Lack of parathyroid hormone will cause an increased release of calcium into the blood. Surgical removal of the thyroid gland from the body would stabilize bone development and increase bone size.
   a. both sentences are correct
   b. first sentence is correct but the second sentence is false
   c. both sentences are false
   d. first sentence is false but the second sentence is correct