LS7 Ch 4 Practice Exam 2012-13

True/False
Indicate whether the statement is true or false.

____ 1. Plants and animals capture their energy from the sun.

____ 2. Cellular respiration describes how a cell breathes.

____ 3. Fermentation produces ATP and lactic acid.

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 4. An organism with chloroplasts is a
a. consumer.
b. prokaryote.
c. producer.
d. centromere.

____ 5. What is produced by mitosis?
a. two identical cells
b. two nuclei
c. chloroplasts
d. two different cells

____ 6. Food particles move through proteins in the cell membrane without using energy in a process called
a. osmosis.
b. passive transport.
c. active transport.
d. endocytosis.

____ 7. When wilted celery is soaked in water, it becomes crisp again due to
a. exocytosis.
b. active transport.
c. vesicle movement.
d. osmosis.

____ 8. Oxygen is used to break down food molecules and release energy in a process called
a. photosynthesis.
b. cytokinesis.
c. cellular respiration.
d. fermentation.

____ 9. Which of the following is NOT used to make glucose in photosynthesis?
a. H_2O
b. O_2
c. CO_2
d. light energy

____ 10. How would sugar entering a cell that already contains a high concentration of sugar get through a cell membrane and into a cell?
a. osmosis
b. active transportation
c. passive transportation
d. the sugar will not go from an area of low concentration to an area of high concentration

____ 11. When a cell membrane surrounds a particle, encloses it in a vesicle, and brings the particle into the cell, this is called
a. osmosis.
b. active transportation.
c. endocytosis.
d. exocytosis.

____ 12. When vesicles are formed at the endoplasmic reticulum or Golgi complex and they carry particles to the cell membrane for export, this is called
a. osmosis.
b. active transportation.
c. endocytosis.
d. exocytosis.

____ 13. Photosynthesis means
a. "within the cell."
b. "outside the cell."
c. "made by light."
d. "breathing."

____ 14. Exocytosis means
a. "within the cell."
b. "outside the cell."
c. "made by light."
d. "breathing."

____ 15. The molecules in the cells of plants that absorb the energy of light are called
a. glucose.
b. carbohydrates.
c. pigments.
d. carbon dioxide.

____ 16. The equation: $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$ + energy (ATP) is the equation for which of the following processes?
a. photosynthesis
b. cellular respiration
c. fermentation
d. exocytosis

____ 17. A product of cellular respiration is
a. oxygen.
b. water.
c. carbon dioxide.
d. Both (b) and (c)

____ 18. Most of the energy released when food is broken down during cellular respiration is in the form of
a. heat.
b. light.
c. sound.
d. chemical.

____ 19. A product of photosynthesis is
a. oxygen.
b. lactic acid.
c. carbon dioxide.
d. light energy.

____ 20. You could consider the chloroplasts and mitochondria in cells to be analogous to
a. waste dumps.
b. resource depletion centers.
c. factories.
d. self-contained, noninteractive entities.

____ 21. The burning sensation you feel in your muscles after running a long distance is due to the effects of
a. active transport.
b. photosynthesis.
c. cellular respiration.
d. fermentation.

____ 22. During fermentation, yeast cells make
a. carbon dioxide and alcohol.
b. glucose and carbon dioxide.
c. lactic acid and ATP.
d. lactic acid and carbon dioxide.

____ 23. When the Earth was young, its atmosphere lacked oxygen. To gain energy, the first life forms used
a. cellular respiration.
b. fermentation.
c. passive transport.
d. active transport.

____ 24. It takes **Cell A** 6 hours to complete its cell cycle and produce two cells. The cell cycle of **Cell B** takes 8 hours. How many more cells would be formed from **Cell A** than **Cell B** in 24 hours?
a. 1
b. 3
c. 4
d. 8

____ 25. Prokaryotic cells have
a. a circular chromosome.
b. 8 chromosomes.
c. 48 chromosomes.
d. 23 pairs of homologous chromosomes.

____ 26. Which of the following would have cells that would undergo binary fission?
a. a potato plant
b. a human body
c. bacteria
d. an insect

____ 27. Human body cells have
a. a single, circular chromosome.
b. 8 chromosomes.
c. 48 chromosomes.
d. 23 pairs of homologous chromosomes.

____ 28. After duplication, how many chromatids are there in a pair of homologous chromosomes?
a. 1
b. 2
c. 3
d. 4

____ 29. Mitosis is usually divided into ____ stage(s).
a. one
b. two
c. three
d. four

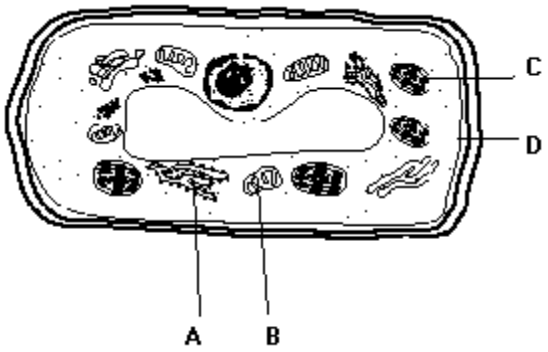
____ 30. The number of chromosomes in the cells of eukaryotes
a. is the same from one kind of organism to the next.
b. is directly proportional to the complexity of the organism.
c. is inversely proportional to the complexity of the organism.
d. has nothing to do with the complexity of the organism.

____ 31. Before mitosis begins,
a. the nuclear membrane breaks apart.
b. the chromosomes and other cell materials are copied.
c. the chromatids separate.
d. the chromosomes line up along the equator of the cell.

____ 32. Once mitosis is complete, the splitting of the cytoplasm or ____ occurs.
a. endocytosis
b. cytokinesis
c. exocytosis
d. osmosis

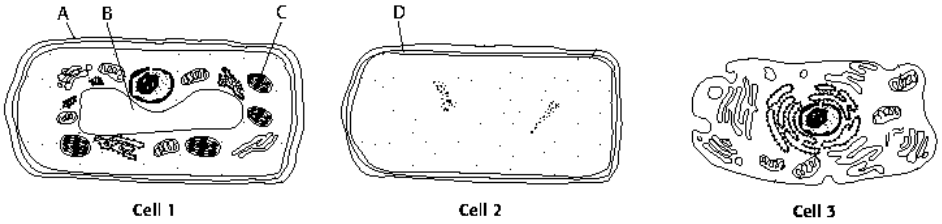
____ 33. What condenses into an "X" shape before mitosis?
a. chromatids
b. centromeres
c. centrioles
d. cytoplasm

Examine the diagram below and answer the questions that follow.



____ 34. Across which structure does osmosis occur?
a. **A**
b. **B**
c. **C**
d. **D**

Examine the diagram below and answer the questions that follow.



____ 35. The structure labeled **C** would most likely be involved in
- a. fermentation.
- b. osmosis.
- c. photosynthesis.
- d. cellular respiration.

____ 36. The structure labeled **D** is where ____ would most likely occur
- a. mitosis
- b. photosynthesis
- c. cytokinesis
- d. osmosis

Study the illustration of the steps in mitosis and answer the questions that follow.

____ 37. At which stage of mitosis do the chromosomes thicken and shorten?
- a. **A**
- b. **B**
- c. **C**
- d. **D**

____ 38. Which of the following correctly indicates the order in which mitosis occurs?
- a. **A, B, C, D**
- b. **B, A, C, D**
- c. **C, B, A, D**
- d. **A, C, B, D**

Completion

Complete each statement.

39. Plants produce their own food by the process of _____. (photosynthesis or fermentation)
40. Human body cells have 23 pairs of _____. (chromatids or chromosomes)
41. The process of cell division in a bacterial cell is called _____. (mitosis or binary fission)
42. The diffusion of particles through proteins in the cell membrane from an area of high concentration to an area of low concentration is called _____.
43. The DNA of a eukaryotic cell is organized into structures called _____.
44. In animal cells, the process in which cytoplasm divides after mitosis is _____.
45. The organelle where photosynthesis occurs is called the _____,.

Short Answer

49. During diffusion, how do particles move?

50. What is osmosis?

51. Suppose one cancer cell undergoes mitosis and forms two new cells every 3 hours. Those cells continue to divide every 3 hours. If you begin with a single cancerous cell, how many cells will you have after 12 hours? Show your work.