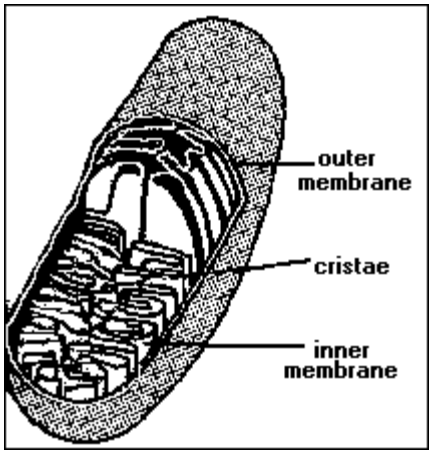
Characteristics of Life: Practice Questions #1

1. Stained yeast were added to a paramecium culture, and some of the yeast were ingested by the paramecia. This activity is most closely associated with which life function?

   A. synthesis
   B. regulation
   C. nutrition
   D. growth

2.



Which metabolic process is most closely associated with the organelle represented in the diagram?

   A. intracellular digestion
   B. cellular respiration
   C. synthesis of glycogen
   D. hydrolysis of lipid

3. Organisms that obtain and ingest organic molecules for their nutrition are classified as

   A. autotrophs
   B. producers
   C. algae
   D. heterotrophs

4. Which substance is an inorganic compound?

   A. water
   B. glucose
   C. maltase
   D. insulin

5. What is a direct result of aerobic respiration?

A. The potential energy of glucose is transferred to ATP molecules
B. The enzymes for anaerobic respiration are produced and stored in lysosomes
C. Lactic acid is produced in muscle tissue
D. Alcohol is produced by yeast and bacteria

6. The life function of transport in an organism directly involves those activities used to

A. absorb and distribute materials
B. obtain and hydrolyze materials
C. release energy from food
D. produce cellular waste products

7. Which term includes all the activities required to keep an organism alive?

A. growth
B. excretion
C. metabolism
D. nutrition

8. An inorganic molecule required by green plants for the process of photosynthesis is

A. oxygen
B. starch
C. carbon dioxide
D. glucose

9.

Why is the organism in the diagram considered a heterotroph rather than an autotroph?

A. It manufactures its own food.
B. It divides by mitosis.
C. It transforms light energy into chemical energy.
D. It absorbs organic nutrients.

10. A change in the external or internal environment of an organism is known as

A. a response
B. an impulse
C. a synapse
D. a stimulus

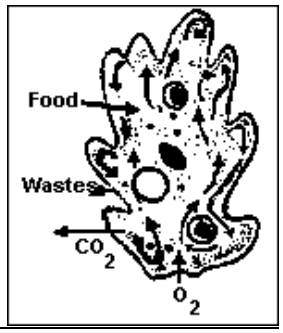
11. Humans breathe more rapidly during exercise than before it because during exercise the blood contains

A. an increased level of oxygen
B. a decreased number of red blood cells
C. an increased level of carbon dioxide
D. a decreased amount of hemoglobin

12. If an organism reproduces asexually, its offspring will most likely be

A. genetically different from each other
B. produced from specialized cells known as gametes
C. genetically identical to the parent
D. produced as a result of fertilization

13.



In the diagram, the arrows show the direction of movement of various substances. Which of the cell's life activities are represented by the arrows?

A. nutrition, reproduction, and regulation
B. excretion, transport, and respiration
C. growth, digestion, and locomotion
D. ingestion, regulation, and synthesis

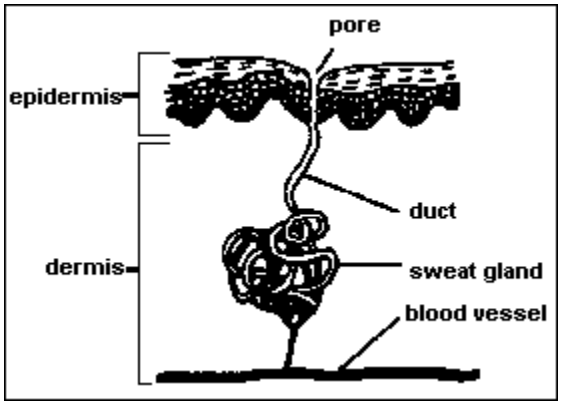
14. Which activity occurs in the process of photosynthesis?

A. Chemical energy from organic molecules is converted into light energy.
B. Organic molecules are obtained from the environment.
C. Organic molecules are converted into inorganic food molecules.
D. Light energy is converted into the chemical energy of organic molecules.

15. The members of a certain species of grass in a lawn are genetically identical. The best explanation for this observation is that the species most probably reproduces

A. by an asexual method
B. after pollination by the wind
C. after pollination by a particular species of bee
D. by identical sperm fertilizing the eggs

16.



What is a major function of the blood vessel represented in the diagram?

A. releasing carbon dioxide into the sweat gland
B. transporting oxygen away from the sweat gland
C. transporting wastes to the sweat gland
D. filtering starch out of the sweat gland

17. Small molecules are combined to form large molecules by the life function of

A. regulation
B. excretion
C. transport
D. synthesis

18. The passage of the end products of digestion into the cells of an organism is an example of

A. absorption
B. digestion
C. circulation
D. regulation

19. The main result of aerobic respiration is the

A. conversion of radiant energy into chemical energy
B. production of lactic acid as an end product
C. storage of energy in a complex sugar
D. production of ATP from the breakdown of glucose

20. Which process is *not* included in heterotrophic nutrition?

A. ingestion
B. photosynthesis
C. egestion
D. digestion

21. Much of the carbon dioxide produced by algae is not excreted as a metabolic waste because it

A. can be used for photosynthesis
B. cannot pass through cell membranes
C. is needed for aerobic respiration
D. is used for the hydrolysis of proteins

22. In a human, the movement of glucose from the digestive tract to muscle cells is most directly a result of

A. ingestion and digestion
B. absorption and circulation
C. anaerobic respiration
D. protein synthesis

23. When a person's level of physical activity changes, the circulatory system supplies body cells with amounts of nutrients and oxygen that are appropriate to sustain the new level of activity. This statement illustrates the concept of

A. homeostasis
B. pinocytosis
C. synthesis
D. cyclosis

24. What is the basic unit of structure and function in all living things?

A. cell
B. tissue
C. organ
D. system

25. Which organism is classified as a heterotroph?

A. mushroom
B. maple tree
C. geranium
D. moss

26. Photosynthesis is the process by which

A. the potential energy of simple sugars is transferred to ATP molecules
B. simple sugars are gradually broken down to form lactic acid or alcohol
C. two simple sugar molecules combine to form maltose and water
D. light energy is converted into the chemical energy of simple sugars

27. Which substance is needed for aerobic cellular respiration to occur?

A. oxygen
B. carbon dioxide
C. nitrogen
D. methane

28. In which process are simple materials chemically combined to form more complex materials?

A. synthesis
B. pinocytosis
C. hydrolysis
D. cyclosis

29. Which reactions in the list below are associated with metabolism?

(*A*) cellular reactions that release energy
(*B*) photosynthetic reactions that store energy
(*C*) muscle reactions that use energy

A. *A* and *B*, only
B. *B* and *C*, only
C. *C* and *A*, only
D. *A*, *B*, and *C*

30. Which gas is excreted as a waste product of autotrophic nutrition in maple trees?

A. nitrogen
B. oxygen
C. carbon dioxide
D. methane

Answer Key:

1. C
2. B
3. D
4. A
5. A
6. A
7. C
8. C
9. D
10. D
11. C
12. C
13. B
14. D
15. A
16. C
17. D
18. A
19. D
20. B
21. A
22. B
23. A
24. A
25. A
26. D
27. A
28. A
29. D
30. B