

MULTIPLE CHOICE Choose the one alternative that best completes the statement or answers the question.

1. The basic structural and physiological unit of all living organisms is the
 - a. aggregate.
 - b. organelle.
 - c. organism.
 - d. membrane.
 - e. cell.

2. A species is
 - a. all the organisms that live together in a particular area.
 - b. a group of morphologically similar organisms that cannot interbreed.
 - c. a group of morphologically similar organisms capable of interbreeding.
 - d. an adult organism and all of its offspring.
 - e. a group of morphologically similar organisms that live in the same area.

3. Which of the following is not a characteristic of a prokaryotic cell?
 - a. A plasma membrane
 - b. A nuclear envelope
 - c. A nucleoid
 - d. Ribosomes
 - e. Enzymes

4. Ribosomes are made up of
 - a. DNA and RNA.
 - b. DNA and proteins.
 - c. RNA and proteins.
 - d. proteins.
 - e. DNA.

5. Lysosomes are important to eukaryotic cells because they contain
 - a. photosynthetic pigments.
 - b. starch molecules for energy storage.
 - c. their own DNA molecules.
 - d. the cells' waste materials.
 - e. digestive enzymes.

6. Which of the following is an example of passive transport?
 - a. Facilitated diffusion
 - b. The sodium–potassium pump
 - c. Phagocytosis
 - d. Exocytosis
 - e. Pinocytosis

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7. DNA replication occurs

- a. during both mitosis and meiosis.
- b. only during mitosis.
- c. only during meiosis.
- d. during the S phase.
- e. during G₂.

8. The enzyme that restores the phosphodiester linkage between adjacent fragments in the lagging strand during DNA replication is

- a. DNA ligase.
- b. primase.
- c. reverse transcriptase.
- d. helicase.
- e. DNA polymerase I.

9. In a sample of double-stranded DNA from a human, you have determined that 20 percent of the nitrogenous base is adenine. What percentage should be cytosine?

- a. 15
- b. 30
- c. 70
- d. 35
- e. 40

10. The genetic code is best described as

- a. redundant but not ambiguous.
- b. ambiguous but not redundant.
- c. both ambiguous and redundant.
- d. neither ambiguous nor redundant.
- e. nonsense.

11. Which of the following is a local hormone?

- a. Adrenaline
- b. Estrogen
- c. Histamine
- d. Insulin
- e. Thyroxine

12. Neurons that transmit information from sensory cells to the central nervous system are part of the

- a. brain.
- b. peripheral nervous system.
- c. central nervous system.
- d. spinal cord.
- e. nerve net.

13. Which of the following are not mechanoreceptors?

- a. Stretch receptors
- b. Hair cells
- c. Pressure receptors
- d. Olfactory receptors

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e. Airflow receptors

14. Which structure constitutes the largest part of the human brain?

- a. Telencephalon
- b. Diencephalon
- c. Medulla
- d. Pons
- e. Cerebellum

15. The role of tendons is to join

- a. two bones.
- b. two ligaments.
- c. bone and ligament.
- d. muscle and ligament.
- e. muscle and bone.

16. Gas exchange in animals always involves

- a. cellular respiration.
- b. breathing movements.
- c. neural control of exchange.
- d. diffusion between internal body fluids and the outside medium.
- e. active transport of gases.

17. In humans, which vessel empties into the right atrium?

- a. Pulmonary veins
- b. Inferior vena cava
- c. Superior vena cava
- d. Pulmonary artery
- e. Both b and c

18. The specific location of the heart pacemaker is the

- a. sinoatrial node.
- b. atrioventricular node.
- c. Purkinje fibers.
- d. bundle of His.
- e. ventricular mass.

19. Bile aids in the breakdown of lipids by

- a. hydrolyzing lipids.
- b. activating hydrolytic enzymes.
- c. aggregating droplets of lipids.
- d. emulsifying lipids.
- e. making lipids water-soluble.

20. Liver cells convert glucose to

- a. glycogen and protein.
- b. glycogen and fat.
- c. fat and protein.
- d. glycogen and amino acids.
- e. fat and amino acids.