

Fundamental Biological Principles

Advanced Biology · Answer Key · 25 Questions

1. Which organelle is known as the powerhouse of the cell?

- A) Nucleus
- B) Mitochondria**
- C) Ribosome
- D) Golgi apparatus

2. What is the primary sugar that plants produce during photosynthesis?

- A) Fructose
- B) Glucose**
- C) Lactose
- D) Sucrose

3. Which molecule carries genetic information in living organisms?

- A) RNA
- B) Protein
- C) DNA**
- D) Lipid

4. How many chromosomes are typically found in a normal human somatic cell?

- A) 23
- B) 46**
- C) 48
- D) 64

5. What is the process by which plants convert light energy into chemical energy?

- A) Respiration
- B) Fermentation
- C) Photosynthesis**
- D) Transpiration

6. Which gas do humans primarily exhale as a waste product of cellular respiration?

- A) Oxygen
- B) Nitrogen
- C) Carbon dioxide**
- D) Hydrogen

7. In which part of the human body would you find the femur?

- A) Arm
- B) Leg**
- C) Skull
- D) Hand

8. Which blood cells are responsible for fighting infections?

- A) Red blood cells
- B) Platelets
- C) White blood cells**
- D) Plasma

9. What is the basic building block of all living organisms?

- A) Atom
- B) Cell**
- C) Molecule
- D) Tissue

10. Which nitrogenous base pairs with Adenine in a DNA molecule?

- A) Guanine
- B) Cytosine
- C) Thymine**
- D) Uracil

11. Which part of the brain is primarily responsible for balance and coordination?

- A) Cerebrum
- B) Cerebellum**
- C) Brainstem
- D) Hypothalamus

12. What type of organism consists of a single cell?

- A) Unicellular**
- B) Multicellular
- C) Bicellular
- D) Tricellular

13. Which organ is responsible for filtering waste from the blood?

- A) Heart
- B) Liver
- C) Kidney**
- D) Stomach

14. What is the name of the process by which a cell divides to produce two identical daughter cells?

- A) Meiosis
- B) Mitosis**
- C) Fertilization
- D) Transcription

15. Which vitamin is primarily produced in the skin upon exposure to sunlight?

- A) Vitamin A
- B) Vitamin C
- C) Vitamin D**
- D) Vitamin K

16. Which human organ is the largest by surface area?

- A) Liver
- B) Lungs
- C) Skin**
- D) Intestine

17. What is the primary function of red blood cells?

- A) Fight infection
- B) Transport oxygen**
- C) Clot blood
- D) Digest food

18. Which element is the central component of all organic molecules?

- A) Oxygen
- B) Carbon**
- C) Nitrogen
- D) Hydrogen

19. What do enzymes do in the human body?

- A) Store energy
- B) Speed up chemical reactions**
- C) Provide structure
- D) Carry oxygen

20. Which part of the plant is responsible for absorbing water and minerals from the soil?

- A) Flower
- B) Leaf
- C) Stem
- D) Root**

21. What is the rigid outer layer of a plant cell called?

- A) Cell wall**
- B) Cell membrane
- C) Cytoplasm
- D) Nucleus

22. Which hormone regulates blood sugar levels?

- A) Adrenaline
- B) Insulin**
- C) Thyroxine
- D) Estrogen

23. What are the units of heredity that are passed from parents to offspring?

- A) Chromosomes
- B) Genes**
- C) Proteins
- D) Cells

24. Which group of organisms are known as the primary decomposers in an ecosystem?

- A) Plants
- B) Fungi**
- C) Herbivores
- D) Carnivores

25. What is the term for an organism that consumes both plants and animals?

- A) Herbivore
- B) Carnivore
- C) Omnivore**
- D) Autotroph