

Advanced Life Science Assessment

Life Science · Practice Test · 8 Questions

1. In the process of aerobic respiration, which organelle is responsible for the majority of ATP production through the electron transport chain?

- A) Nucleus
- B) Mitochondrion
- C) Ribosome
- D) Golgi apparatus

2. Which phase of mitosis is characterized by the migration of sister chromatids to opposite poles of the cell?

- A) Prophase
- B) Metaphase
- C) Anaphase
- D) Telophase

3. In a Mendelian dihybrid cross involving two heterozygous parents (AaBb x AaBb), what is the expected phenotypic ratio in the offspring?

- A) 3:1
- B) 9:3:3:1
- C) 1:2:1
- D) 1:1:1:1

4. Which structural feature of a leaf is primarily responsible for the exchange of gases such as carbon dioxide and oxygen?

- A) Cuticle
- B) Stomata
- C) Xylem
- D) Mesophyll

5. During protein synthesis, which molecule carries the genetic code from the DNA in the nucleus to the ribosome?

- A) tRNA
- B) rRNA
- C) mRNA
- D) DNA polymerase

6. Which type of ecological succession occurs in an area where soil is already present and the previous community was removed by a disturbance?

- A) Primary succession
- B) Secondary succession
- C) Climax succession
- D) Pioneer succession

7. What is the functional unit of the human kidney responsible for filtering blood and forming urine?

- A) Nephron
- B) Alveolus
- C) Neuron
- D) Glomerulus

8. Which taxonomic rank is the most specific level of classification within the biological hierarchy?

- A) Family
- B) Order
- C) Genus
- D) Species