Biology Quiz

1. What part of the mitochondria is folded into tubular structures called cristae?

a) Outer membrane

b) Inner membrane

c) Intermembrane space

d) Matrix

2. According to the endosymbiont theory, what is the evolutionary origin of the inner mitochondrial membrane?

a) Aerobic bacteria

b) Anaerobic bacteria

c) Early eukaryotic cells

d) External symbionts

3. What structures allow the selective transport of metabolites in and out of the mitochondria?

a) Porins

b) Cristae

c) Transporters

d) Tubules

4. Which of the following concepts did Darwin's theory of natural selection provide an explanation for?

a) The diversity of living organisms

b) The adaptation of organisms to their environment

c) The patterns found in the fossil record

d) All of the above

5. What did Darwin mean when he used the phrase 'survival of the fittest' in relation to natural selection?

a) The strongest organisms survive

b) Organisms best adapted to the environment are more likely to survive

c) Only organisms free from defects survive

d) Organisms evolve to become perfectly designed

6. According to Darwin's theory, what is the main driver of differences seen between species over time?

a) Use and disuse of organs

b) Inheritance of acquired characteristics

c) Sudden mutations

d) Gradual accumulation of small variations

7. What did Darwin identify as a potential mechanism for evolution besides natural selection?

a) Genetic drift

b) Sexual selection

c) Neutral evolution

d) Punctuated equilibrium

8. What organism did Gregor Mendel use in his famous experiments on heredity?

a) Mice

b) Fruit flies

c) Pea plants

d) Maize

9. What term did Mendel use to describe heritable traits that are masked in the first generation of offspring?

a) Epistatic

b) Polygenic

c) Recessive

d) Codominant

10. What did Mendel hypothesize was being passed from parents to offspring to determine characteristics?

a) Chromosomes

b) Hormones

c) Particulate substances

d) Cytoplasm

11. What modern molecular structure did Mendel's hypothesized 'particles' later turn out to be?

a) Phospholipids

b) Proteins

c) Genes

d) Enzymes