

Advanced Life Science Trivia

Life Science · Practice Test · 23 Questions

1. In what year did James Watson and Francis Crick publish their seminal paper describing the double-helix structure of DNA in the journal *Nature*?

- A) 1949
- B) 1951
- C) 1953
- D) 1955

2. The discovery of penicillin by Alexander Fleming is often cited as occurring in which year?

- A) 1918
- B) 1928
- C) 1938
- D) 1948

3. Gregor Mendel, the father of genetics, published his groundbreaking work on pea plant inheritance in which decade?

- A) 1840s
- B) 1850s
- C) 1860s
- D) 1870s

4. The approximate number of genes in the human genome is estimated to be:

- A) 20,000-25,000
- B) 50,000-75,000
- C) 100,000-150,000
- D) 200,000-300,000

5. Which year marked the first successful synthesis of urea from inorganic compounds by Friedrich Wöhler, challenging vitalism?

- A) 1818
- B) 1828
- C) 1838
- D) 1848

6. The first complete DNA sequencing of a free-living organism was achieved for *Haemophilus influenzae* in which year?

- A) 1985
- B) 1990
- C) 1995
- D) 2000

7. In 1901, Carl Correns, Erich von Tschermak, and Hugo de Vries independently rediscovered Mendel's laws. What was the name of the journal Correns published his findings in?

- A) Biologisches Zentralblatt
- B) Zeitschrift für Pflanzenzüchtung
- C) Botanisches Centralblatt
- D) Die Naturwissenschaften

8. The bacterium *Escherichia coli* (E. coli) has a genome size of approximately how many base pairs?

- A) 4.6 million
- B) 10 million
- C) 46 million
- D) 100 million

9. Who is credited with coining the term 'ecology' in 1866?

- A) Charles Darwin
- B) Alfred Russel Wallace
- C) Ernst Haeckel
- D) Gregor Mendel

10. The process of fermentation, where yeast converts sugars to alcohol in the absence of oxygen, was extensively studied by Louis Pasteur. In which decade did he publish his major work on this topic?

- A) 1840s
- B) 1850s
- C) 1860s
- D) 1870s

11. The ABO blood group system was discovered by Karl Landsteiner in which year?

- A) 1898
- B) 1901
- C) 1904
- D) 1907

12. The human body contains approximately how many different types of cells?

- A) 50-100
- B) 100-200
- C) 200-300
- D) 300-400

13. In what year did the first successful in-vitro fertilization (IVF) baby, Louise Brown, arrive?

- A) 1975
- B) 1978
- C) 1981
- D) 1984

14. The electron microscope, which revolutionized cell biology, was invented by Ernst Ruska and Max Knoll in which year?

- A) 1928
- B) 1932
- C) 1936
- D) 1940

15. What is the approximate number of cells in the human body?

- A) 10 trillion
- B) 100 trillion
- C) 1 quadrillion
- D) 10 quadrillion

16. The discovery of the structure of antibodies (immunoglobulins) was largely attributed to the work of Rodney Porter and Gerald Edelman, for which they shared the Nobel Prize in Physiology or Medicine in 1972. In which year did Porter publish his initial findings on antibody structure?

- A) 1958
- B) 1959
- C) 1960
- D) 1961

17. The enzyme luciferase, responsible for bioluminescence in fireflies, was first isolated and characterized by E.N. Harvey in the:

- A) 1930s
- B) 1940s
- C) 1950s
- D) 1960s

18. The human genome project was formally launched in which year?

- A) 1988
- B) 1990
- C) 1992
- D) 1994

19. Who developed the polymerase chain reaction (PCR) technique, for which he was awarded the Nobel Prize in Chemistry in 1993?

- A) Kary Mullis
- B) Michael Smith
- C) Hamilton Smith
- D) Frederick Sanger

20. The approximate percentage of water in a typical human body by mass is:

- A) 45-55%
- B) 55-65%
- C) 65-75%
- D) 75-85%

21. The discovery of the structure of RNA in 1965 by Robert Holley, for which he received the Nobel Prize, involved sequencing which small RNA molecule?

- A) mRNA
- B) tRNA (alanine)
- C) rRNA
- D) snRNA

22. The first fully synthetic cell was created by J. Craig Venter Institute scientists in which year?

- A) 2008
- B) 2010
- C) 2012
- D) 2014

23. The concept of 'natural selection' was independently formulated by Charles Darwin and which other naturalist in the mid-19th century?

- A) Gregor Mendel
- B) Alfred Russel Wallace
- C) Jean-Baptiste Lamarck
- D) Ernst Mayr