Biological Codes and Ciphers

Biological Information Systems · Practice Test · 10 Questions

1. Which molecule acts as the biological 'cipher' containing the instructions for the development and function of all known living organisms?

A) ATP
B) DNA
C) Hemoglobin
D) Insulin

2. In genetic coding, how many nucleotide bases typically make up a 'codon' that translates into a specific amino acid?

A) One
B) Two
C) Three
D) Four

3. What is the term for the process where the cell 'decodes' mRNA to assemble amino acids into proteins?

A) Transcription
B) Translation
C) Replication
D) Mutation

4. Which medical diagnostic tool uses a radio-frequency 'code' to interact with hydrogen atoms in the body to create images of internal structures?

A) MRI
B) X-ray
C) Ultrasound
D) ECG

5. What type of unique human physiological 'cipher' is based on the patterns of friction ridges on the fingers?

A) Retinal scan
B) DNA profile
C) Fingerprint
D) Pulse rate

6. The Human Genome Project successfully 'cracked' the sequence of how many base pairs in human DNA?

A) 300 million
B) 3 billion
C) 3 trillion
D) 30 billion

7. In neuroscience, what 'code' do neurons use to transmit information across the body through rapid changes in electrical voltage?

A) Action potentials
B) Chemical bonding
C) Binary logic
D) Thermal waves

8. What specific biological 'cipher' is used in the eye to verify identity based on the complex patterns of the iris?

A) Corneal curvature
B) Iris recognition
C) Scleral color
D) Pupil dilation

9. Which protein structure acts as a biological cipher for the immune system to distinguish 'self' from 'non-self' pathogens?

A) MHC complex
B) Collagen
C) Keratin
D) Myosin

10. The 'Central Dogma' of molecular biology describes the flow of genetic information in which specific order?

A) Protein to RNA to DNA
B) DNA to Protein to RNA
C) DNA to RNA to Protein
D) RNA to DNA to Protein