

Cybersecurity and Biological Metrics

Cybersecurity · Answer Key · 10 Questions

1. Which layer of the human epidermis is most commonly utilized in high-resolution optical fingerprint scanners for pattern matching?

- A) Stratum basale
- B) Stratum corneum**
- C) Stratum granulosum
- D) Stratum lucidum

2. In iris recognition technology, which anatomical structure provides the complex, non-genetic texture patterns used for cryptographic entropy?

- A) The lens
- B) The ciliary body
- C) The stroma**
- D) The retina

3. What is the primary physiological limitation of using venous pattern recognition in the human hand for authentication?

- A) Dehydration alters vein width
- B) Subcutaneous fat accumulation
- C) Circadian fluctuations in blood flow**
- D) Thermal signature dissipation

4. In terms of ECG-based biometric authentication, which specific cardiac electrical event corresponds to the R-peak of the QRS complex?

- A) Ventricular depolarization**
- B) Atrial repolarization
- C) Ventricular repolarization
- D) Atrial depolarization

5. Which human physiological response is measured by 'galvanic skin response' sensors integrated into modern authentication tokens to detect liveness?

- A) Epidermal keratinization
- B) Eccrine sweat gland activity**
- C) Capillary refill rate
- D) Dermal temperature homeostasis

6. What is the scientific term for the involuntary, high-frequency oscillations of the human eye utilized in ocular-based behavioral biometrics?

- A) Saccades
- B) Nystagmus
- C) Microsaccades**
- D) Accommodation

7. Which portion of the human ear provides the complex cartilaginous structure captured by 3D acoustic-biometric systems?

- A) The helix**
- B) The auditory ossicles
- C) The cochlea
- D) The tympanic membrane

8. In gait analysis for cybersecurity surveillance, which anatomical feature is the primary pivot point for calculating the center of mass oscillation?

- A) The talus
- B) The sacroiliac joint**
- C) The patella
- D) The calcaneus

9. What specific biological factor makes DNA-based encryption 'non-revocable' compared to standard cryptographic keys?

- A) DNA is stored in the cloud
- B) The genome is immutable throughout adulthood**
- C) DNA sequencing error rates are zero
- D) Biological samples can be digitally cloned

10. Which specific human behavioral characteristic is analyzed by Keystroke Dynamics systems to measure the neuromuscular 'flight time' between key presses?

- A) Cortisol levels
- B) Synaptic delay
- C) Proprioceptive feedback loops**
- D) Muscle fiber fatigue