

Sports Science Elite Data

Sports Science · Answer Key · 18 Questions

1. In what year did the International Olympic Committee first implement mandatory blood testing for EPO at the Summer Olympic Games?

- A) 1996
- B) 2000**
- C) 2004
- D) 2008

2. What is the approximate threshold of blood lactate concentration, measured in mmol/L, typically used to define the onset of blood lactate accumulation (OBLA)?

- A) 2.0
- B) 4.0**
- C) 6.0
- D) 8.0

3. Who is credited with the 1965 invention of the 'Balke Protocol', a treadmill stress test used to measure aerobic capacity?

- A) Bruno Balke**
- B) Kenneth Cooper
- C) Per-Olof Astrand
- D) Jack Daniels

4. In the 1954 sub-four-minute mile record, what was the precise time recorded by Roger Bannister?

- A) 3:58.4**
- B) 3:59.2
- C) 3:59.4
- D) 3:59.8

5. The 'Wingate Test', developed at the Wingate Institute in the 1970s, measures anaerobic power over how many seconds?

- A) 15
- B) 30**
- C) 45
- D) 60

6. Which scientist published the seminal paper 'The Size Principle of Motor Unit Recruitment' in 1965?

A) Elwood Henneman

- B) A.V. Hill
- C) Archibald Hill
- D) John Holloszy

7. What is the standard frequency, in Hertz, of a typical force plate used in biomechanical research to capture ground reaction forces?

- A) 100Hz
- B) 500Hz
- C) 1000Hz**
- D) 2000Hz

8. At what specific age did the 'Relative Age Effect' first see significant academic documentation regarding its impact on professional sports selection?

A) 1978

- B) 1982
- C) 1988
- D) 1994

9. Which physiological variable is calculated by the product of stroke volume and heart rate?

A) Cardiac Output

- B) VO2 Max
- C) Ventilatory Threshold
- D) Mean Arterial Pressure

10. In 1922, Archibald Hill was awarded a Nobel Prize for his work in physiology, specifically regarding what process?

A) Muscle heat production

- B) Hemoglobin oxygen transport
- C) Glycolysis pathways
- D) ATP hydrolysis

11. What is the standard coefficient of friction between a standard athletic shoe and a synthetic track surface?

- A) 0.3
- B) 0.6
- C) 0.9**
- D) 1.2

12. The 'Cooper Test', developed by Kenneth Cooper in 1968, evaluates physical fitness based on distance covered in how many minutes?

- A) 8
- B) 10
- C) 12**
- D) 15

13. Which muscle fiber type is characterized by high myosin ATPase activity and high glycolytic capacity?

- A) Type I
- B) Type IIa
- C) Type IIx**
- D) Type Ic

14. What is the typical concentration of sodium (in mmol/L) found in the sweat of a heat-acclimated athlete?

- A) 10-20
- B) 30-60**
- C) 70-100
- D) 110-140

15. In 1990, which organization officially published the first guidelines on 'Female Athlete Triad' syndrome?

- A) ACSM**
- B) IOC
- C) FIFA
- D) NSCA

16. What is the approximate thermal conductivity of human adipose tissue in W/mK?

- A) 0.12
- B) 0.21**
- C) 0.35
- D) 0.48

17. Which statistical value represents the typical reliability of a Dual-Energy X-ray Absorptiometry (DEXA) scan for body composition?

- A) 0.90
- B) 0.95
- C) 0.98
- D) 0.99**

18. Who identified the 'Glycogen Supercompensation' effect in endurance athletes during the 1960s?

A) Jonas Bergström

B) Bengt Saltin

C) Per-Olof Astrand

D) David Costill