Mathematics in Human Biology

Mathematics · Practice Test · 20 Questions

1. On average, a healthy adult human heart beats approximately 70 times per minute. How many times does it beat in one hour?

A) 4,200
B) 3,600
C) 4,800
D) 5,000

2. The average human adult has approximately 5 litres of blood. If a blood donation typically removes 470 millilitres, what percentage of the total blood volume is this roughly?

A) 5.4%
B) 9.4%
C) 12.4%
D) 15.4%

3. An average human tooth has 3 roots if it is a maxillary first molar. How many roots would there be on 12 of these specific teeth combined?

A) 24
B) 30
C) 36
D) 42

4. The human body consists of 206 bones in adulthood. If a child is born with approximately 270 bones, how many bones fuse together during growth?

A) 64
B) 54
C) 74
D) 44

5. The average human breathes about 16 times per minute. Approximately how many breaths does a person take in a 24-hour period?

A) 18,000
B) 23,040
C) 25,600
D) 21,120

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6. A human red blood cell is approximately 8 micrometres in diameter. How many red blood cells would need to be lined up to measure 1 millimetre?

A) 125
B) 150
C) 200
D) 80

7. The small intestine is approximately 6 metres long. If the large intestine is approximately 1.5 metres long, what is the total combined length?

A) 7.0 metres
B) 7.5 metres
C) 8.0 metres
D) 6.5 metres

8. Standard atmospheric pressure is 101.3 kPa. If a diver experiences an increase of 100 kPa for every 10 metres of depth, what is the total pressure at 20 metres?

A) 201.3 kPa
B) 301.3 kPa
C) 211.3 kPa
D) 401.3 kPa

9. The human eye blinks about 15 times per minute. How many times does an individual blink during a 16-hour waking day?

A) 12,000
B) 14,400
C) 16,000
D) 18,000

10. If a person burns 300 calories during a 30-minute run, how many calories do they burn per minute on average?

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

11. The human brain weighs approximately 1.4 kilograms. If this represents about 2% of the total body weight, what is the total body weight in kilograms?

A) 60 kg
B) 70 kg
C) 80 kg
D) 90 kg

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12. An adult human has 32 teeth. If a person loses 4 wisdom teeth, what fraction of their original adult set remains?

A) 3/4
B) 7/8
C) 5/6
D) 2/3

13. Human skin replaces itself roughly every 28 days. How many times does the skin theoretically renew itself in one year (365 days)?

A) 12
B) 13
C) 14
D) 15

14. If the human body is approximately 60% water by mass, how many kilograms of water are in a 70 kg person?

A) 40 kg
B) 42 kg
C) 44 kg
D) 46 kg

15. A resting metabolic rate for a human is approximately 1 calorie per kilogram of body weight per hour. How many calories does a 60 kg person burn in 12 hours?

A) 600
B) 720
C) 840
D) 960

16. The human spinal column contains 33 vertebrae at birth. By adulthood, some fuse to form the sacrum and coccyx, resulting in how many distinct bones?

A) 24
B) 26
C) 28
D) 30

17. A healthy human fingernail grows at a rate of about 3 millimetres per month. How long will it take for a nail to grow 1.5 centimetres?

A) 3 months
B) 4 months
C) 5 months
D) 6 months

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18. If a person's heart rate increases from 60 bpm to 120 bpm during exercise, what is the percentage increase?

A) 50%
B) 100%
C) 150%
D) 200%

19. There are 2,500 taste buds on the average human tongue. If a person loses 20% of their taste buds due to aging, how many remain?

A) 1,800
B) 2,000
C) 2,100
D) 2,200

20. If a human kidney filters approximately 180 litres of blood per day, how many litres does it filter in one week?

A) 1,000
B) 1,160
C) 1,260
D) 1,360

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