

Brett Robbins Academic Consulting

Biology 20 Practice Test

Unit 4: Human Systems

25 Questions

Original practice questions written to the Alberta curriculum, in the style of past diploma examinations. Work through each question, then check your answers with the key at the end.

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, contact Brett for clarification.

Question 1

Most of the chemical digestion and absorption of nutrients in the human digestive system occurs in the

- A) Stomach
- B) Small intestine
- C) Large intestine
- D) Liver

Question 2

The enzyme in saliva that begins the chemical digestion of starch in the mouth is

- A) Pepsin
- B) Lipase
- C) Salivary amylase
- D) Trypsin

Question 3

In the respiratory system, gas exchange between the air and the blood occurs in the

- A) Alveoli
- B) Bronchi
- C) Trachea
- D) Diaphragm

Question 4

Which blood vessel carries oxygen-rich blood from the heart to the rest of the body?

- A) Pulmonary artery
- B) Vena cava
- C) Pulmonary vein
- D) Aorta

Question 5

The number of chambers in the human heart is ____.

Question 6

The function of the epiglottis during swallowing is to

- A) Produce mucus that traps dust and bacteria
- B) Secrete enzymes into the small intestine
- C) Cover the opening of the trachea so food does not enter the airway
- D) Move food through the esophagus by peristalsis

Question 7

During inhalation, the diaphragm

- A) Contracts, increasing the volume of the chest cavity
- B) Relaxes, decreasing the volume of the chest cavity
- C) Contracts, decreasing the volume of the chest cavity
- D) Relaxes, forcing air out of the lungs

Question 8

A drop of blood returning from the body passes through the following structures of the heart.

1 Aorta 2 Right atrium 3 Left ventricle 4 Right ventricle

The order in which the blood passes through these structures, from first to last, is ____.

Record your answer as a four-digit number.

Question 9

Bile, which helps in the digestion of fats, is stored in the

- | | |
|-------------|--------------------|
| A) Liver | B) Gallbladder |
| C) Pancreas | D) Small intestine |

Question 10

In a nephron, the filtration of blood under pressure occurs in the

- | | |
|--------------------|------------------|
| A) Proximal tubule | B) Loop of Henle |
| C) Collecting duct | D) Glomerulus |

Question 11

Some structures of the digestive system are listed below.

- 1 Large intestine 2 Mouth 3 Stomach 4 Small intestine 5 Esophagus

The order in which food passes through these structures, from first to last, is ____.

Record your answer as a five-digit number.

Question 12

Deoxygenated blood is pumped from the right ventricle to the lungs through the

- | | |
|---------------------|-------------------|
| A) Pulmonary artery | B) Pulmonary vein |
| C) Aorta | D) Vena cava |

Question 13

The component of blood that transports oxygen is the

- | | |
|--------------------|----------------------|
| A) Plasma | B) White blood cells |
| C) Red blood cells | D) Platelets |

Question 14

Which pairing of an enzyme with its function is correct?

- A) Lipase digests starch in the mouth
- B) Pepsin digests protein in the stomach
- C) Trypsin digests fat in the stomach
- D) Salivary amylase digests protein in the small intestine

Question 15

Some structures involved in urine formation and excretion are listed below.

- 1 Urethra 2 Ureter 3 Bowman's capsule 4 Urinary bladder

The order in which filtrate and urine pass through these structures, from first to last, is ____.

Record your answer as a four-digit number.

Question 16

The villi that line the small intestine function to

- A) Produce digestive enzymes
- B) Secrete insulin into the blood
- C) Move food by peristalsis
- D) Increase the surface area for absorption

Question 17

During vigorous exercise, the concentration of CO_2 in the blood increases.

The body's immediate response is to

- A) Increase the rate and depth of breathing
- B) Decrease the rate and depth of breathing
- C) Decrease the heart rate
- D) Store the excess CO_2 in the alveoli

Question 18

The valves inside the heart and veins function to

- A) Produce the heartbeat
- B) Prevent the backflow of blood
- C) Filter wastes from the blood
- D) Exchange gases with the tissues

Question 19

A student has a resting heart rate of 72 beats per minute and a stroke volume of 70 mL per beat.

The student's cardiac output, in millilitres per minute, is ____.

Question 20

Which statement about the pancreas is incorrect?

- A) It secretes amylase, which digests starch
- B) It secretes trypsin, which digests protein
- C) It secretes lipase, which digests fat
- D) It secretes insulin into the small intestine to digest glucose

Question 21

At the alveoli, oxygen passes from the air into the blood mainly because

- A) The blood has a higher oxygen concentration than the air in the alveoli
- B) Oxygen is actively pumped across the alveolar membrane
- C) The air in the alveoli has a higher oxygen concentration than the blood
- D) The diaphragm forces oxygen into the capillaries

Question 22

Some structures of the respiratory system are listed below.

1 Trachea 2 Alveoli 3 Nasal cavity 4 Bronchus

The order in which inhaled air passes through these structures, from first to last, is ____.

Record your answer as a four-digit number.

Question 23

In a healthy kidney, glucose does not normally appear in the urine because glucose is

- A) Completely reabsorbed into the blood from the filtrate
- B) Blocked from entering the nephron at the glomerulus
- C) Changed into protein during filtration
- D) Stored in the urinary bladder

Question 24

Which statement correctly describes an interaction between two body systems?

- A) The digestive system supplies oxygen to the blood for the respiratory system
- B) The excretory system pumps blood through the heart and lungs
- C) The respiratory system absorbs nutrients from digested food
- D) In the lungs, oxygen from the respiratory system passes into the blood of the circulatory system

Question 25

The natural pacemaker of the heart, which initiates each heartbeat, is the

- A) Atrioventricular node
- B) Sinoatrial node
- C) Medulla oblongata
- D) Vagus nerve

Answer Key

- | | | |
|---------|-----------|----------|
| 1. B | 10. D | 19. 5040 |
| 2. C | 11. 25341 | 20. D |
| 3. A | 12. A | 21. C |
| 4. D | 13. C | 22. 3142 |
| 5. 4 | 14. B | 23. A |
| 6. C | 15. 3241 | 24. D |
| 7. A | 16. D | 25. B |
| 8. 2431 | 17. A | |
| 9. B | 18. B | |

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