ALBERTA SCIENCE 30 · UNIT A · 10 QUESTIONS

Living Systems Respond to Their Environment — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **An antigen is best described as a**

- A protein on the surface of a pathogen that can trigger an immune response
- B chemical released by damaged tissues to cause swelling
- C type of white blood cell that produces antibodies
- D hormone that raises body temperature during a fever

Understand It with Pulse | Flag a mistake

2 **Bacterial populations can become resistant to an antibiotic because**

- **A** the antibiotic causes helpful mutations in all of the bacteria
- **B** resistant bacteria share their DNA with every nearby species
- **C** bacteria that are naturally resistant survive the antibiotic and reproduce, passing on resistance
- **D** the human body learns to destroy the antibiotic

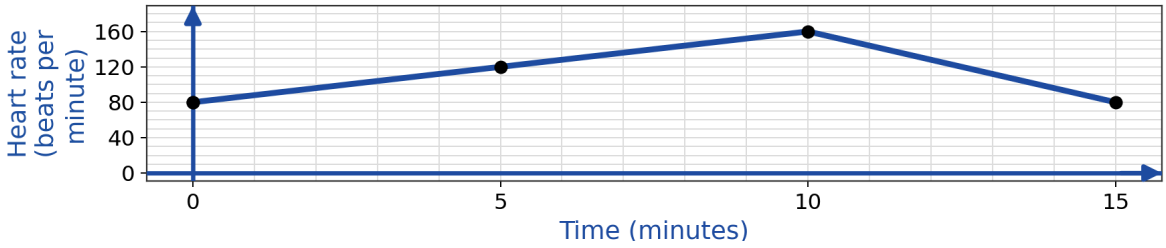
Understand It with Pulse | Flag a mistake

3 **The role of cytotoxic (killer) T cells in an immune response is to**

- **A** produce antibodies that tag pathogens
- **B** destroy body cells that have been infected by a pathogen
- **C** engulf bacteria in damaged tissue
- **D** release histamine during inflammation

Understand It with Pulse | Flag a mistake

4 **The graph below shows heart rate during and after a period of exercise. The highest heart rate shown, in beats per minute, is**



- **A** 80
- **B** 120
- **C** 160
- **D** 200

Understand It with Pulse | Flag a mistake

5 **The parasympathetic nervous system is most active when a person is**

- **A** running from danger
- **B** lifting a heavy weight
- **C** preparing for an emergency
- **D** resting and digesting food, with a slowed heart rate

Understand It with Pulse | Flag a mistake

6 **When a person is dehydrated, ADH (antidiuretic hormone) causes the kidneys to**

- A reabsorb more water into the blood, producing concentrated urine
- B release more water into the urine
- C stop filtering the blood completely
- D produce glucose for energy

Understand It with Pulse | Flag a mistake

7 **A child whose pituitary gland produces too little growth hormone is most likely to develop**

- A gigantism
- B diabetes mellitus
- C dwarfism
- D Graves disease

Understand It with Pulse | Flag a mistake

8 **Some events of the inflammatory response are listed below. 1 Blood vessels near the injury dilate and become more permeable 2 Tissue is damaged and pathogens enter the body 3 Phagocytes move into the tissue and engulf pathogens 4 Mast cells release histamine The order in which the events occur, from first to last, is _____ Record your answer as a four-digit number.**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **A moderate fever during an infection is considered part of the second line of defence because it**

A kills every pathogen in the body within minutes

B can slow the reproduction of many pathogens and speed up body responses

C prevents pathogens from entering through the skin

D is produced directly by antibodies

Understand It with Pulse | Flag a mistake

10 **The hypothalamus plays a central role in homeostasis because it**

A filters pathogens out of the blood

B manufactures all of the hormones used by the body

C stores the hormones produced by the thyroid gland

D monitors conditions in the body and directs the pituitary gland, linking the nervous and endocrine systems

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. A
2. C
3. B
4. C
5. D
6. A
7. C
8. 2413
9. B
10. D

© 2026 Brett Robbins. All Rights Reserved.