

Cells and Systems Quiz

Time: 20 min. 6 questions.

Instructions

Answer all six questions in complete sentences where required. For the numeric question, show your calculation. You may use your notes on cell structure and human body systems, but work independently.

Questions

1. Which structure is found in a plant cell but not in an animal cell?

- A) Cell membrane
- B) Cell wall
- C) Cytoplasm
- D) Nucleus

[\(Outcome\)](#)

2. Explain what scientists mean when they describe an organism as a "system." Use an example of a familiar organism in your answer.

[\(Outcome\)](#)

3. True or false: Diffusion moves gases and liquids into and out of a cell from an area of lower concentration to an area of higher concentration.

[\(Outcome\)](#)

4. A hockey player's resting heart rate is 72 beats per minute. During a shift on the ice, his heart rate increases by 25%. What is his heart rate, in beats per minute, during the shift?

[\(Outcome\)](#)

5. Which body system is mainly responsible for exchanging oxygen and carbon dioxide between the air and the blood?

- A) Digestive system
- B) Excretory system
- C) Respiratory system
- D) Sensory system

[\(Outcome\)](#)

6. Give one example of how research into human cells, organs or body systems has led to an improvement in human health.

[\(Outcome\)](#)

Curriculum coverage

Question	Outcome alias
1	Outcome
2	Outcome
3	Outcome

4	Outcome
5	Outcome
6	Outcome

Answer key

1. B) Cell wall. Plant cells have a rigid cell wall outside the cell membrane, which supports the cell and is not present in animal cells ([Outcome](#)).

2. A system is a set of parts that work together to carry out a function, such as an animal's digestive system, where the mouth, stomach and intestines each play a role in breaking down and absorbing food ([Outcome](#)).

3. False. Diffusion moves substances from an area of higher concentration to an area of lower concentration, based on the concentration difference ([Outcome](#)).

4. 90 beats per minute. $72 \times 0.25 = 18$, and $72 + 18 = 90$, showing the heart rate increase in response to exercise ([Outcome](#)).

5. C) Respiratory system. The lungs exchange oxygen and carbon dioxide with the blood as part of respiration ([Outcome](#)).

6. Any reasonable example is acceptable, such as the development of vaccines or immunization procedures, which came from research into how cells and the immune system respond to disease ([Outcome](#)).