

APOLLO

Transport HL

Biology

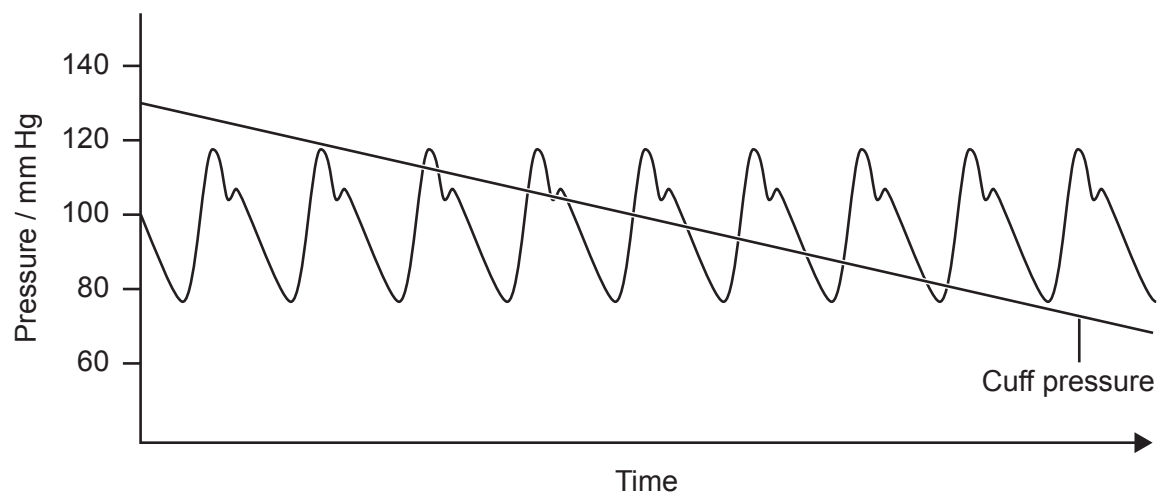
First assessment 2025

13 questions | questions

24. What increases the rate of transpiration?

- A. Increasing the humidity
- B. Decreasing the temperature
- C. Decreasing the light intensity
- D. Increasing the wind speed

25. The graph shows changes in blood pressure during the cardiac cycle, taken using a sphygmomanometer. A cuff is attached to the upper arm, inflated to stop the blood flow in the artery, then the pressure released.



What are the values of the diastolic and systolic pressures from the graph?

	Diastolic pressure / mm Hg	Systolic pressure / mm Hg
A.	120	76
B.	130	66
C.	76	120
D.	66	130

Turn over

24. Which environmental condition(s) would increase the rate of transpiration in plants?

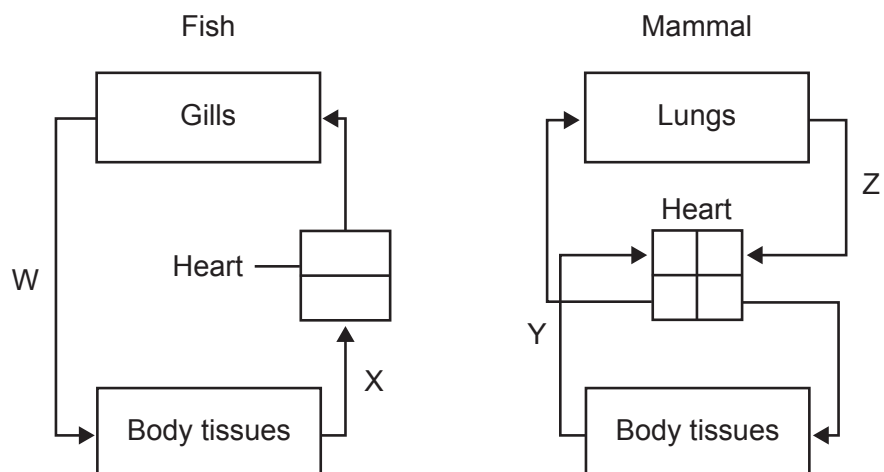
- I. Increased carbon dioxide concentration in the atmosphere
- II. Increased temperature of the atmosphere
- III. Decreased humidity of the atmosphere relative to the inside of the leaf

- A. I and II only
- B. III only
- C. II and III only
- D. I and III only

24. What is a reason that veins have relatively thin walls compared to arteries?

- A. Allows muscle contraction to assist in blood flow
- B. Prevents a blood clot forming
- C. Allows exchange of materials with tissue fluid
- D. Easier attachment of semilunar valves

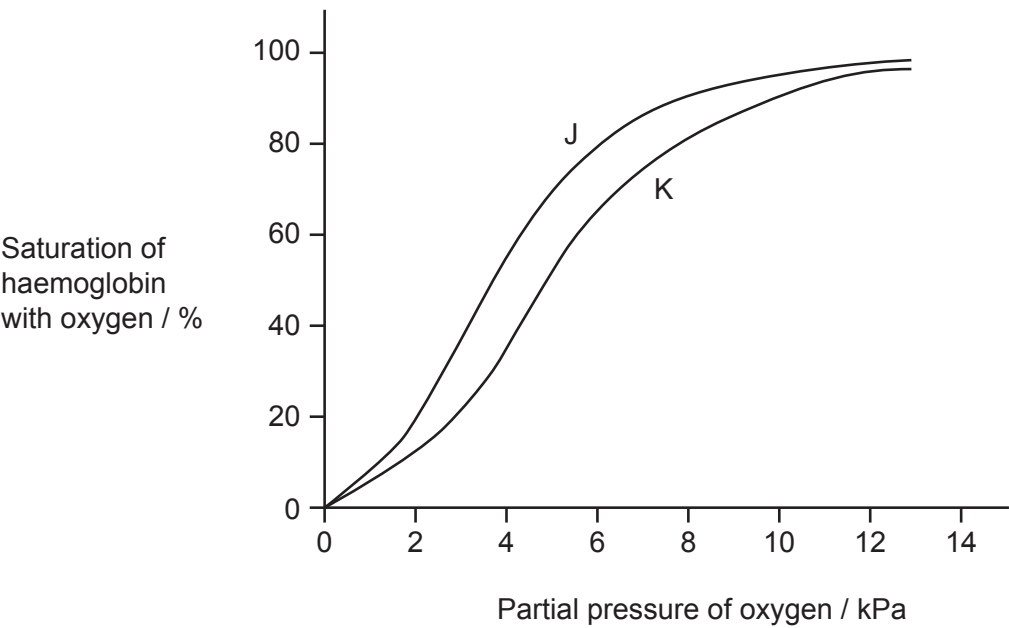
26. The diagrams show blood circulation in a fish and a mammal.



Which two labels represent deoxygenated blood with the lowest pressure in each animal?

- A. W and Z
- B. X and Y
- C. W and Y
- D. X and Z

23. The graph shows the Bohr shift.

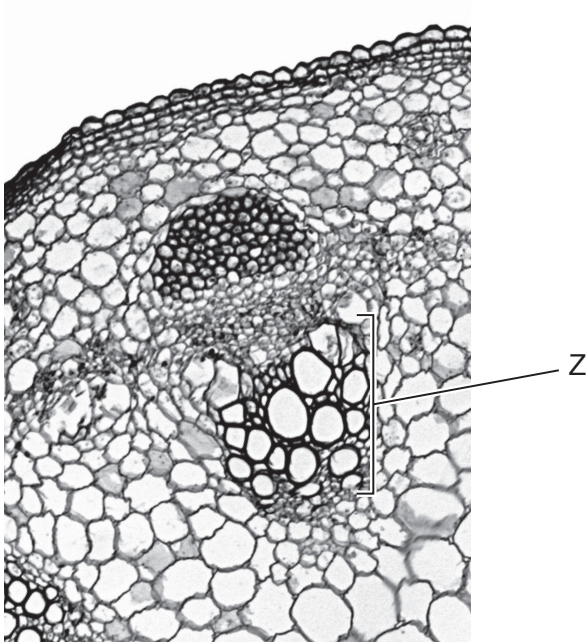


What causes the shift from J to K?

	Carbon dioxide concentration	pH
A.	decrease	higher
B.	decrease	lower
C.	increase	higher
D.	increase	lower

Turn over

24. The micrograph shows part of the stem of the common sunflower (*Helianthus annuus*) in cross section.



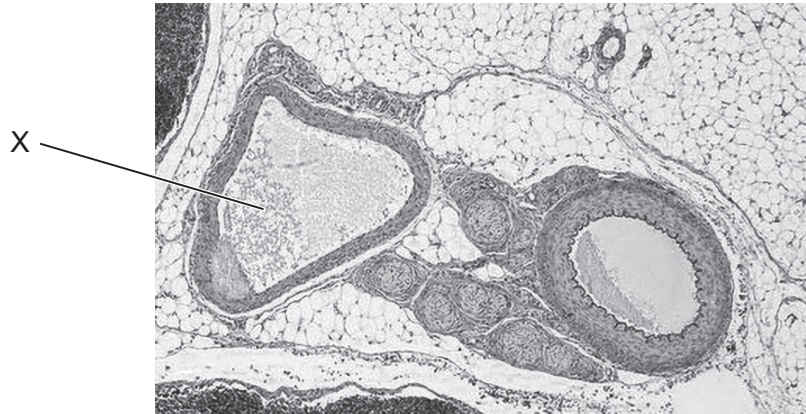
What is the name and function of the structure labelled Z?

	Name	Function
A.	xylem	transport water
B.	phloem	transport water
C.	xylem	transport sugars
D.	phloem	transport sugars

25. How is the phloem adapted for transport?

- A. Sieve tube elements have many mitochondria for active transport.
- B. Plasmodesmata between companion cells and sieve tube elements aid transport between them.
- C. Phloem tubes unload carbon compounds at sources by pressure flow.
- D. Companion cells have reduced cytoplasm to enhance loading of carbon compounds.

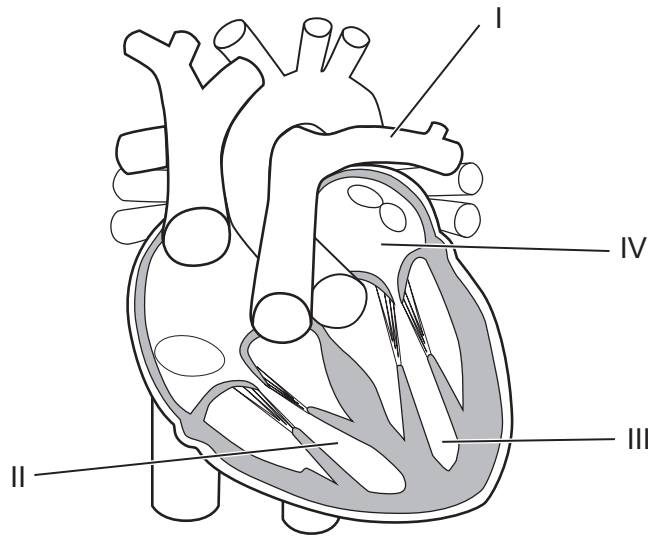
24. The micrograph shows a transverse section of blood vessels in a human leg muscle.



Which is the main contributor to the movement of blood along vessel X?

- A. The smooth surface of the inner lining
- B. Stretching and recoiling of the vessel walls
- C. Differences in plasma solute concentration
- D. Contraction of muscles adjacent to the vessel

25. The diagram shows the human heart.



After oxygen has been released from a red blood cell in the brain, which sequence shows the path taken by this red blood cell through the heart before it reaches the aorta?

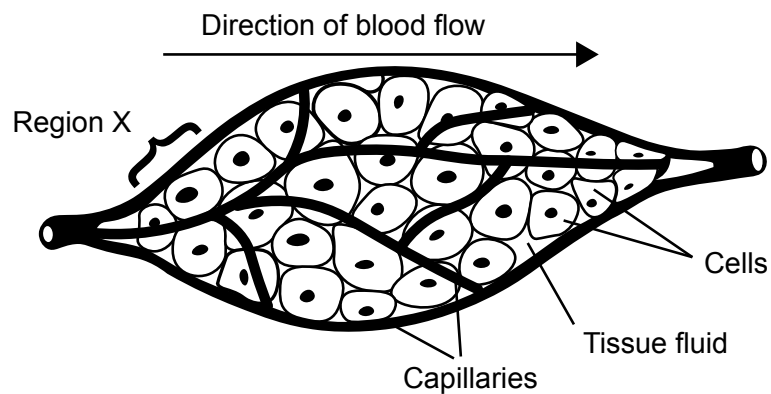
- A. I → II → III → IV
- B. IV → III → II → I
- C. II → I → IV → III
- D. IV → III → I → II

12. Which is a feature of phloem sieve tube cells?

- A. Numerous chloroplasts
- B. No nucleus
- C. Lignified walls
- D. No cytoplasm

- 26.** What is always a consequence of the evaporation of water from mesophyll cells in leaves of a healthy plant?
- A. Plasmolysis occurs in mesophyll cells.
 - B. Photosynthesis stops.
 - C. Stomata close to reduce transpiration.
 - D. Water moves up the stem in the xylem.

27. The diagram shows where the exchange of substances between blood and tissue fluid occurs in a capillary bed.



What explains the movement of solutes between blood and tissue fluid at region X?

- A. Blood plasma has a higher concentration of solutes than tissue fluid.
- B. Tissue fluid has a more negative water potential than blood plasma.
- C. Hydrostatic pressure is higher in blood than in tissue fluid.
- D. The permeability of capillary walls is highest at region X.