

Question 12 (Answer: **B**)

- Xylem vessels are formed from dead cells joined end to end.
- The end walls break down, leaving a continuous hollow tube.
- The walls are thick and lignified, and there are no mitochondria because the cells are dead.

Question 9 (Answer: **B**)

- Xylem lies on the *upper* side of the vein in a leaf, with phloem below it.
- Xylem cells are dead and hollow with thick, lignified walls.
- So look for the thick-walled empty vessels inside the vascular bundle.

Question 14 (Answer: **B**)

- Xylem vessels must resist the tension of water being pulled up, so their walls are thick and lignified.
- They are dead and hollow, with no cytoplasm at all.
- So they contain no mitochondria – water transport in xylem needs no energy from the vessel itself.

Question 13 (Answer: **B**)

- Xylem is always on the *inner* side of a vascular bundle.
- In a leaf that means the upper side of the vein; in a stem, inside the phloem ring.
- In a root the xylem forms the central star, with phloem between its arms.

5(a)(i)	circle drawn around one vascular bundle ;
5(a)(ii)	X drawn to identify palisade mesophyll tissue ;
5(a)(iii)	chloroplasts ;
5(a)(iv)	ref to xylem and phloem ; phloem responsible for, translocation / transport of sucrose or amino acids ; xylem transports, water / mineral ions ; xylem provides support ;
5(b)(i)	hydrophyte ;
5(b)(ii)	T : air space ; <i>explanation:</i> creates buoyancy / decreases density, (of leaf) ; buoyancy
5(b)(iii)	stomata on, upper epidermis / upper side of leaf ; allows gas exchange / AW ; or thin / no, cuticle ; no need to prevent water loss ; or AVP ;;