

Solutions

Each answer shows the steps, then the **result**.

2.1

- red blood cells **carry oxygen** (using haemoglobin)

2.2

- clotting uses **platelets**

2.3

- **red blood cells, white blood cells, platelets and plasma**

2.4

- a clot **stops further blood loss**
- it **prevents pathogens** entering the wound

2.5

- no nucleus leaves **more space**
- for **haemoglobin**, so each cell can carry more oxygen

3.1 A

- the liquid that carries dissolved substances is **plasma**
- B, C and D are cells or a protein

3.2

(a)

- a phagocyte **engulfs and digests** the pathogen

(b)

- a lymphocyte **makes antibodies** that stick to the pathogen

3.3

- the clot **seals the wound** to stop blood loss
- and **stops pathogens getting in**

3.4

(a)

- **red blood cells; phagocytes; lymphocytes; plasma**

(b)

- in the lungs, haemoglobin + oxygen → **oxyhaemoglobin**
- blood carries it to the muscle
- in the muscle it **dissociates** and releases oxygen

(c)

- any **two** of: **biconcave** shape → large SA:V / **no nucleus** → more haemoglobin / **small and flexible** → through capillaries

(d)

- platelets and damaged tissue release chemicals
- **fibrinogen** → insoluble **fibrin**
- fibrin mesh **traps red cells** and seals the wound

(e)

- at high altitude, **less oxygen** diffuses into the blood
- more red cells mean more haemoglobin, so **enough oxygen** still reaches tissues