

9.4 Blood

Name: _____ Class: _____ Date: _____

Total: 7 marks

KEY WORDS blood 血液 • antibodies 抗体 • pathogens 病原体 • clot 凝血 • haemoglobin 血红蛋白

Objective

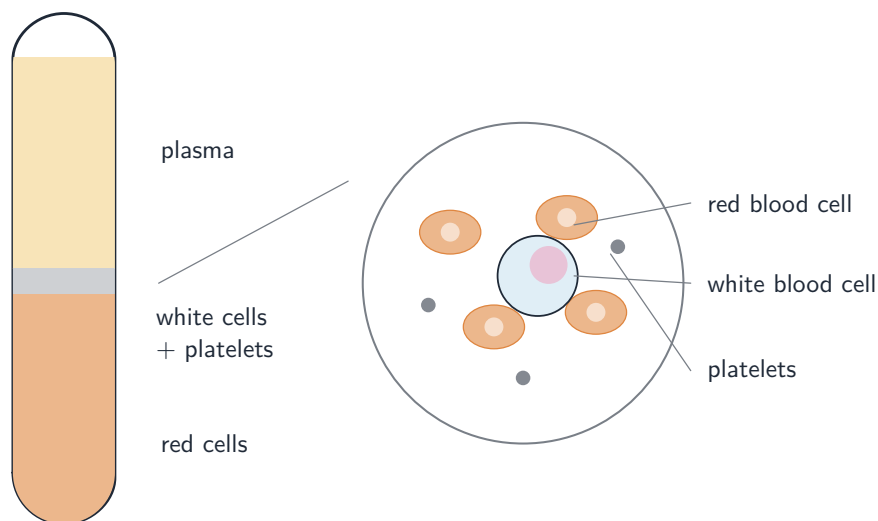
Build the skills to answer exam questions on **blood** 血液 — the four components, the role of white blood cells, and **clotting** 凝血.

You must be able to:

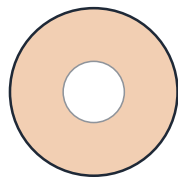
- name the four components of blood and their functions
- describe how phagocytes and lymphocytes defend the body
- describe how blood clots

1 Worked examples

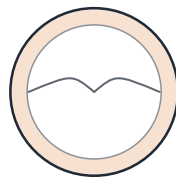
■ Components of blood



Red cells (oxygen, haemoglobin), white cells (defence), platelets (clotting), plasma (transport)



artery
thick muscular,
elastic wall;
narrow lumen;
high pressure



vein
thin wall;
wide lumen;
has **valves**;
low pressure



capillary
wall one cell
thick; lets
substances be
exchanged

Blood components travel in the vessels

- **phagocytes** engulf pathogens; **lymphocytes** make antibodies.
- clotting: fibrinogen → fibrin threads → a net that traps cells.

2 Practice

2.1 State the function of red blood cells.

[1]

2.2 Name the part of the blood that helps it clot.

[1]

3 Exam-style questions

3.1 The liquid part of blood that carries dissolved substances is the:

[1]

- **A** plasma
- **B** platelets
- **C** red blood cells
- **D** haemoglobin

3.2 White blood cells defend the body.

(a) Describe how a phagocyte deals with a pathogen.

[1]

(b) Describe how a lymphocyte deals with a pathogen.

[1]

3.3 Explain why clotting of blood at a cut is important.

[2]

Solutions

2.1 they carry oxygen (using haemoglobin).

2.2 platelets.

3.1 A. Plasma is the liquid that carries dissolved substances.

3.2 (a) it surrounds and digests (engulfs) the pathogen.

(b) it makes antibodies that stick to and destroy the pathogen.

3.3 the clot seals the wound to stop blood loss; and stops pathogens getting in.