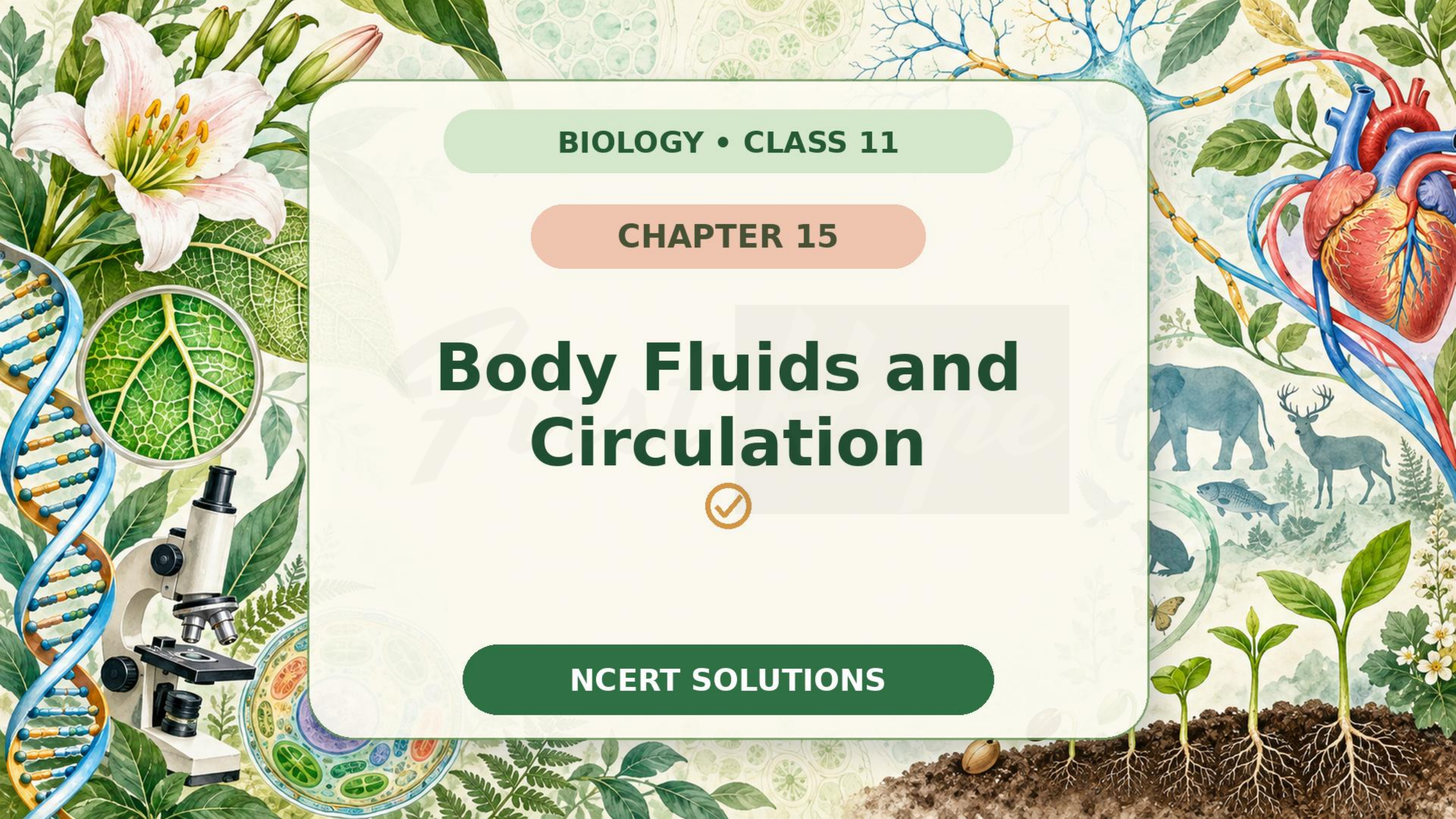


A vibrant collage of biological illustrations. On the left, a pink lily flower is in bloom, with green buds and leaves. Below it, a blue and orange DNA double helix is visible. A magnifying glass focuses on a green leaf's vein structure. A microscope is positioned in the lower-left corner. The background is filled with various green leaves and ferns. On the right, a detailed illustration of a human heart with red and blue blood vessels is shown. Below the heart, there are silhouettes of an elephant, a deer, and a fish. At the bottom, a small green plant with roots is growing out of a mound of brown soil.

BIOLOGY • CLASS 11

CHAPTER 15

Body Fluids and Circulation



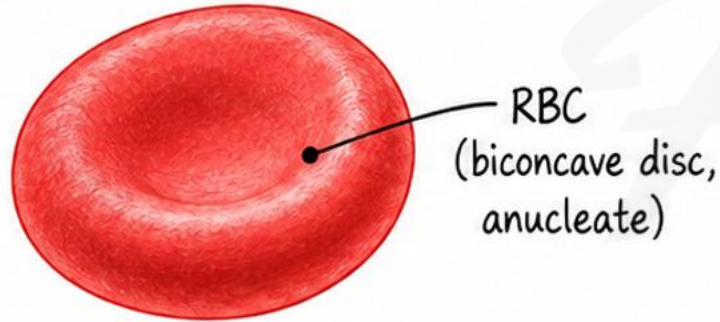
NCERT SOLUTIONS

EXERCISE SOLUTION: QUESTION 1

1. Name the components of the formed elements in blood and mention one major function of each.

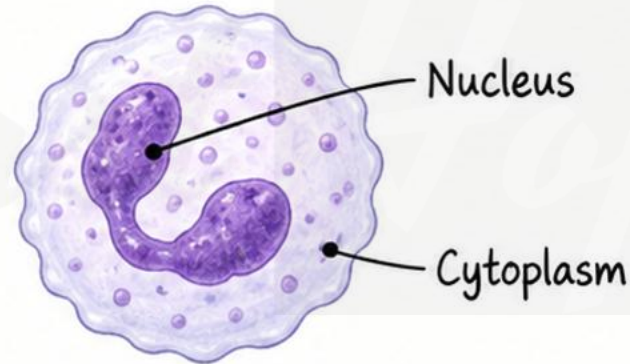
Answer: The formed elements in blood include erythrocytes (RBCs), leucocytes (WBCs) and platelets (thrombocytes). Their components and one major function of each are given below:

1. Erythrocytes (RBCs)



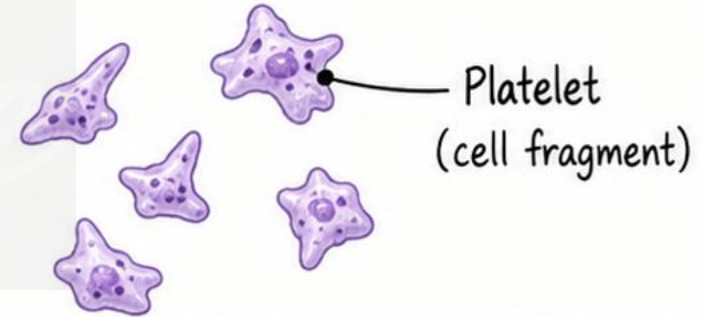
Contain haemoglobin and transport respiratory gases, mainly O_2 and some CO_2 .

2. Leucocytes (WBCs)



Protect the body against infection and take part in immune responses.

3. Platelets (thrombocytes)



Release factors that help blood coagulation and prevent excessive blood loss.

Thus, erythrocytes (RBCs), leucocytes (WBCs) and platelets (thrombocytes) together constitute the formed elements in blood.

EXERCISE SOLUTIONS: QUESTIONS 2-4

Q2. What is the importance of plasma proteins?

Answer:

- Fibrinogen — needed for clotting.
- Globulins — mainly involved in body defence.
- Albumins — maintain osmotic balance.

Q3. Match Column I with Column II.

Answer:

- | | | | |
|-------------------|--------------------------|-----------------|----------------------------|
| (a) Eosinophils — | (iii) Resist infections | (d) Platelets — | (i) Coagulation |
| (b) RBC — | (v) Gas transport | (e) Systole — | (iv) Contraction of heart. |
| (c) AB group — | (ii) Universal recipient | | |

Q4. Why is blood considered a connective tissue?

Answer:

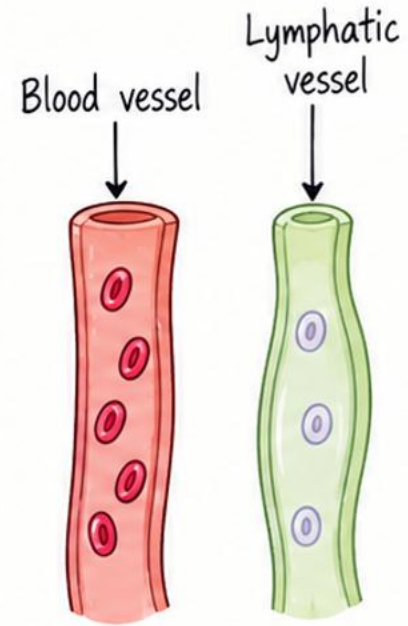
Blood has living formed elements suspended in a fluid extracellular matrix called plasma. It circulates throughout the body and connects different tissues by transporting gases, nutrients, hormones and wastes. Therefore, it is a specialised connective tissue.

EXERCISE SOLUTION: QUESTION 5

5. What is the difference between lymph and blood?

Answer:

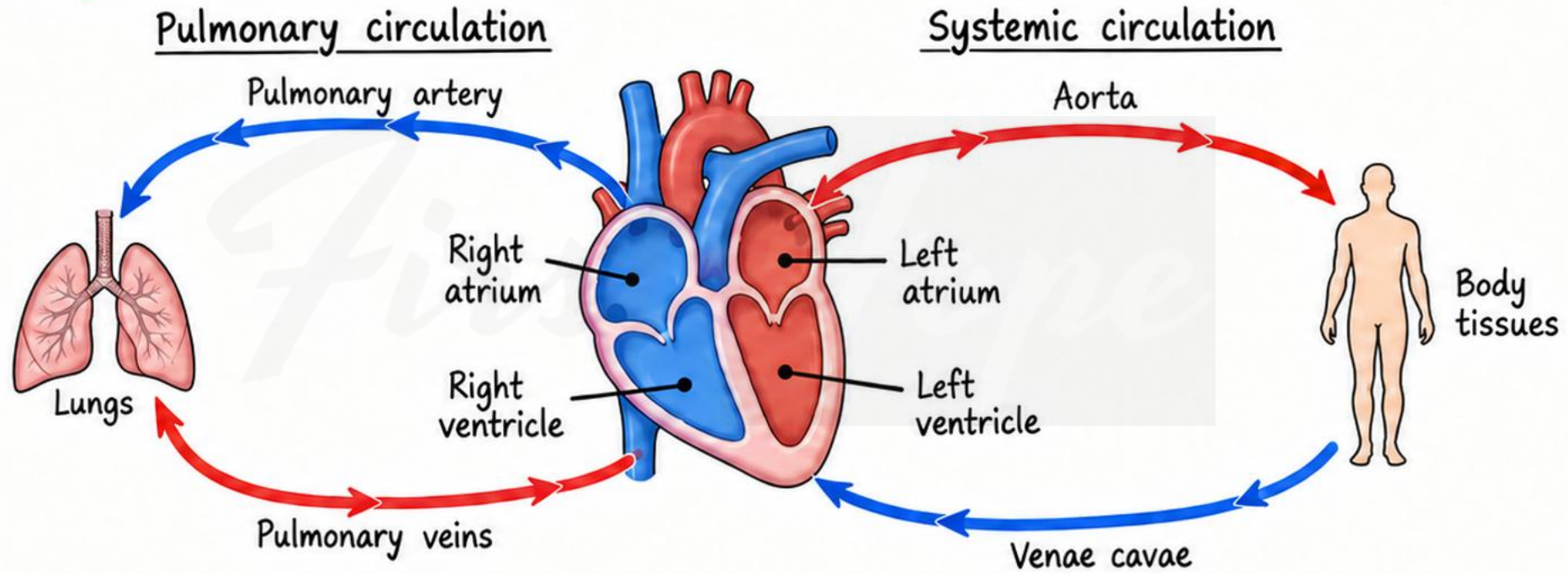
	Blood	Lymph
Colour:	red because of haemoglobin	colourless
Cells:	RBCs, WBCs and platelets	mainly lymphocytes; RBCs absent and platelets very few/absent
Proteins:	relatively more plasma proteins	lower protein content
Flow:	pumped by heart through a closed system of arteries, capillaries and veins	moves through lymphatic vessels and returns to major veins
Main roles:	transports gases, nutrients, hormones and wastes	returns tissue fluid, supports immunity, and transports absorbed fats from intestinal lacteals.



EXERCISE SOLUTION: QUESTION 6

Q6. What is meant by double circulation? What is its significance?

Answer: Double circulation means that blood passes through the heart twice during one complete circuit of the body.



Significance:

- keeps oxygenated and deoxygenated blood separate.
- maintains suitable pressure in pulmonary and systemic circuits.
- supplies oxygen efficiently for a high metabolic rate.



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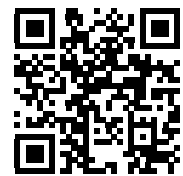


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