CAMBRIDGE LOWER SECONDARY CHECKPOINT
PRACTISE QUESTIONS AND MARK SCHEMES

Subject: Biology Topic: Structure and Function

TOPIC: Blood-Set-1

1 **(i)** Describe **one** difference that exists between a red blood cell and a typical animal cell.

.....

..... [1]

(ii) State an advantage of this feature in a red blood cell.

.....

..... [1]

[Total: 9]

MARK SCHEME:

(i) red blood cell –

1 has haemoglobin;

2 biconcave shape;

3 no nucleus;

any one – 1 mark [1]

(ii) 1 carries oxygen;

2 increases surface area for absorption/release of oxygen;

3 can hold greater amount of haemoglobin;

advantage must relate to difference

any one – 1 mark [1]

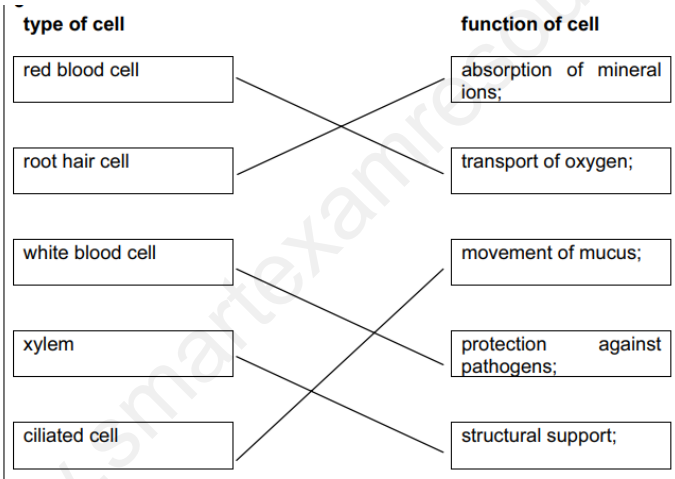
2 Five types of animal and plant cells and five possible functions of such cells are shown below.

Draw **one** straight line from each type of cell to a function of that cell.

type of cell	function of cell
red blood cell	absorption of mineral ions
root hair cell	transport of oxygen
white blood cell	movement of mucus
xylem	protection against pathogens
ciliated cell	structural support

[5]

MARK SCHEME



Each correct line – 1 mark each [5]

Award marks based on origins of lines
2 or more lines from a type of cell – no mark with the exception of 2 lines from the ciliated cell joining with movement of mucus and protection against pathogens

3 able 5.1 shows the components of the blood.

Complete Table 5.1 to show the functions of these components.

Table 5.1

component of blood	function
red blood cells	
white blood cells	
platelets	
plasma	

[4]

MARK SCHEME:

component of blood	function
red blood cells	carries / transport oxygen ;
white blood cells	phagocytosis / antibody production / defence / immunity ;
platelets	clotting ;
plasma	transport of, blood cells / ions / (soluble) nutrients (named) / hormones / carbon dioxide / heat / urea / water / named molecule / enzymes ;

4 Fig. 9.1 shows a person donating blood.

Blood is split into its separate components and used to treat different medical conditions.

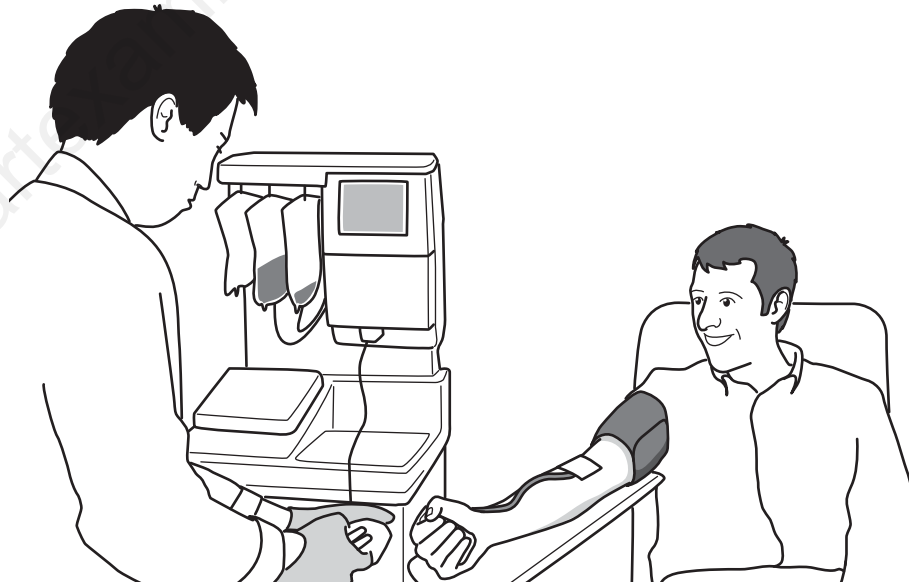


Fig. 9.1

(a) Table 9.1 shows the components of blood and the medical conditions that they are used to treat.

The boxes on the left show the components of blood.

The boxes on the right show the medical conditions that they are used to treat.

Draw a straight line from each component of the blood to the medical condition that it is used to treat.

Table 9.1

components of blood	medical condition
plasma	to help patients whose blood does not clot easily
platelets	to treat patients with burns who have lost body fluids
red blood cells	to treat patients who have low immunity
white blood cells	to treat patients with low levels of haemoglobin

[3]

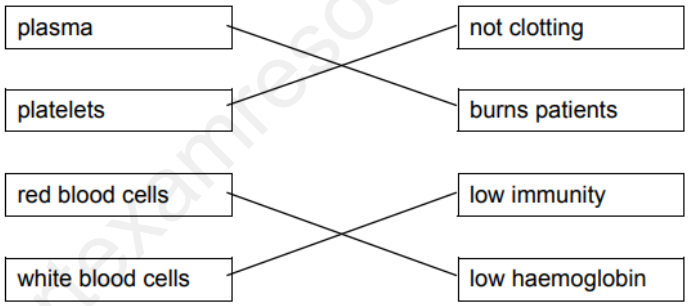
(b) Describe **two ways** that the structure of a red blood cell differs from the structure of a white blood cell.

1 .....

2 .....

[2]

MARK SCHEME:

(a)		**3**	All 4 correct = 3 2 or 3 correct = 2 1 correct = 1
(b)	rounder / (bi)concave / fixed shape / disc shaped / doughnut shaped ; lacks a nucleus ; it contains haemoglobin ; smaller ;	**2**	**I** colour

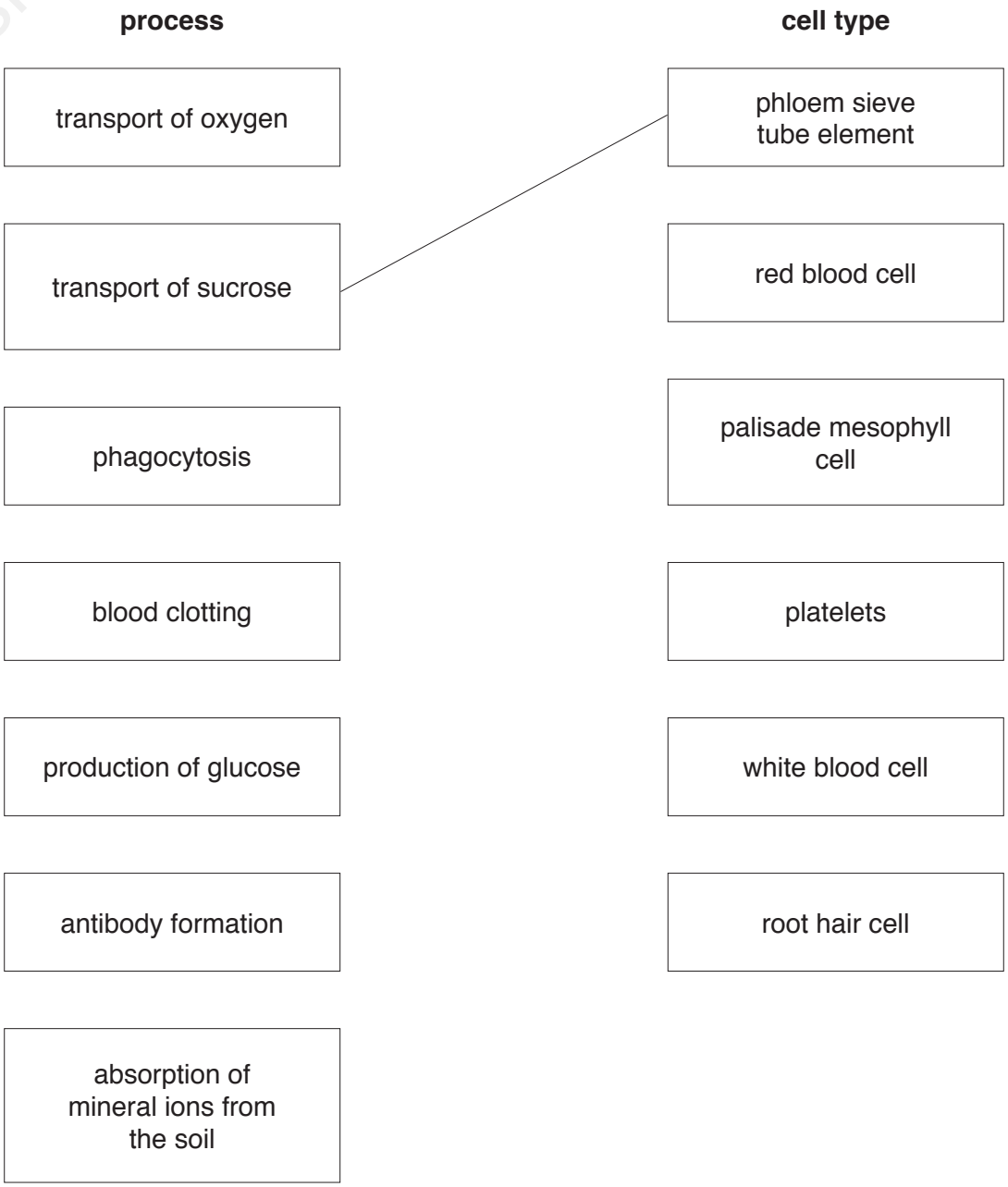
5 **(a)** The boxes on the left describe processes carried out by cells.

The boxes on the right contain the names of the cells that carry out these processes.

Draw **one** straight line from each box on the left to a box on the right to link the process to the cell type.

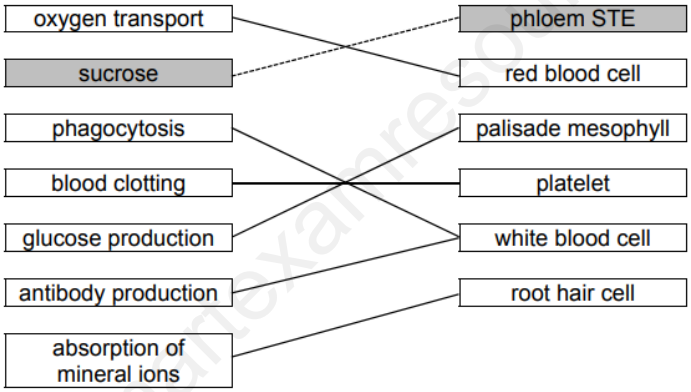
Draw **six** lines.

An example has been done for you.



[6]

MARK SCHEME:

	**6**	one mark for each correct line deduct one mark for each extra line drawn

6 Some components of blood defend the body against disease.

Table 4.1 contains the names of three of the components of blood.

It also states three defence mechanisms.

Complete Table 4.1 by placing a tick (✓) in the box that matches each defence mechanism to the correct component of blood.

Table 4.1

defence mechanism	component of blood		
	platelets	red blood cells	white blood cells
antibody production			
blood clotting			
phagocytosis			

[3]

MARK SCHEME:

	(antibody) white blood cell ticked ; (blood clotting) platelets ticked ; (phagocytosis) white blood cell ticked ;	3	

7 Fig. 7.1 shows a photomicrograph of a capillary with red blood cells passing through it.

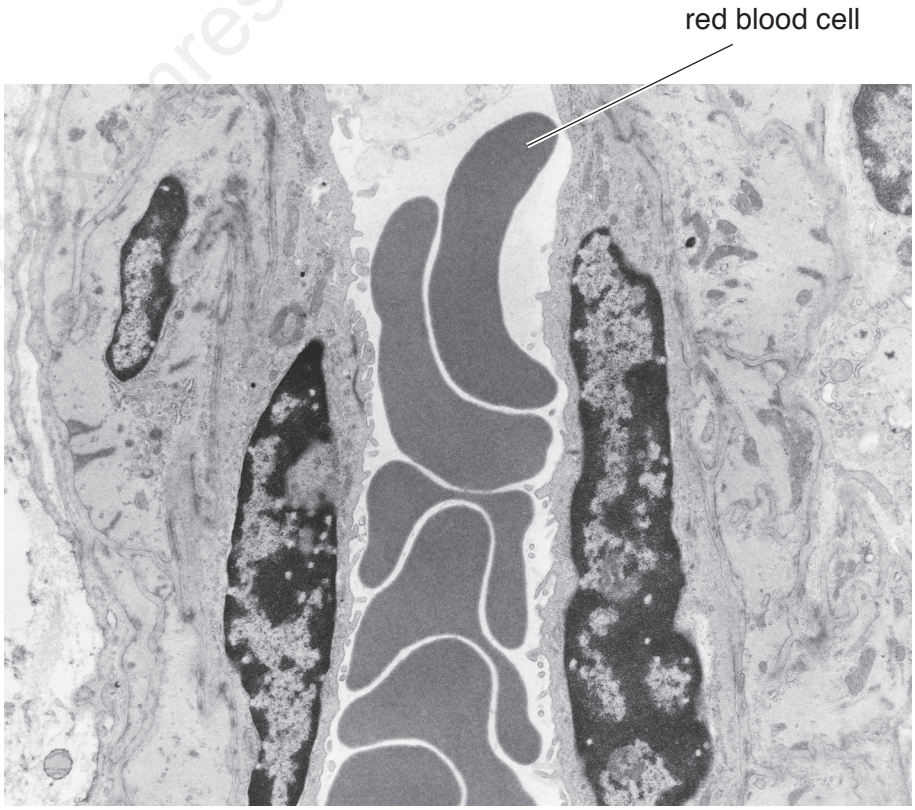


Fig. 7.1

(i) State the function of the red blood cells shown in Fig. 7.1.

.....

..... [1]

(ii) Red blood cells are one component of blood.

State the name of **two** other components of blood.

1 .....

2 .....

[2]

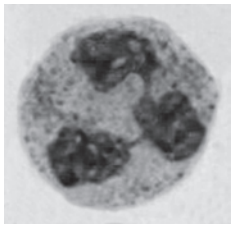
MARK SCHEME:

(i)	carries / supplies oxygen ;	**1**	
(ii)	white blood cells / phagocytes / lymphocytes ; platelets ; plasma ;	**2**	

8 Fig. 9.1 shows four animal cells.

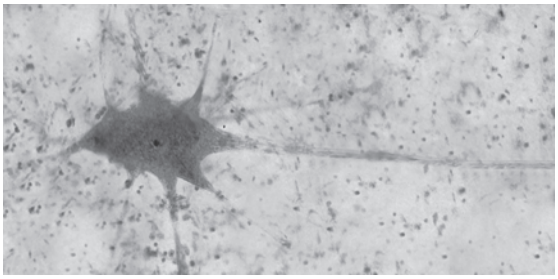
A

B



C

nerve cell



D

red blood cell

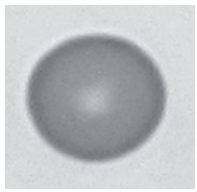


Fig. 9.1

(a) (i) Identify the cells labelled **A** and **B**.

A .....

B ..... [2]

(ii) State the function of cell **A** and describe how it is adapted to this function.

.....

.....

.....

..... [2]

(iii) State **one** function of cell **B**.

.....

..... [1]

MARK SCHEME:

(a)	(i) **A** – sperm cell; **B** – white blood cell / phagocyte / leucocyte;	[2]	A – lymphocyte
	(ii) fusing with ovum / egg (cell) / fertilisation / forming zygote; has tail to swim to reach ovum;	[2]	I – ovule A – is haploid, streamlined, has acrosome, mitochondria,
	(iii) to surround / engulf / digest / destroy microorganisms / phagocytosis;	[1]	A – produce antibodies

Note: You need not answer about sperm cells: