

# 9. Transport in animals

9.4 Blood

Paper 3 and 4

Question Paper

## Paper 3

**Questions are applicable for both core and extended candidates**

1 (b) Fig. 1.1 is a diagram of a normal red blood cell.

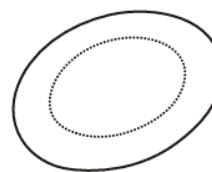
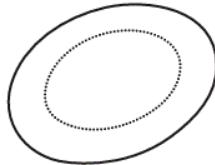
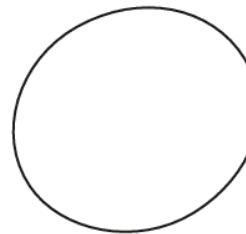


Fig. 1.1

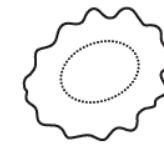
Fig. 1.2 shows three red blood cells that have been placed in different concentrations of a salt solution.



A



B



C

Fig. 1.2

Identify the cell that has been placed in a very concentrated salt solution.

Give reasons for your answer.

cell .....

reasons .....

.....

.....

.....

.....

.....

[3]

(c) Water is needed by all organisms.

State **two** processes in organisms that use water as a solvent.

1 .....

2 .....

[2]

2 Fig. 3.1 is a photomicrograph of a sample of human blood

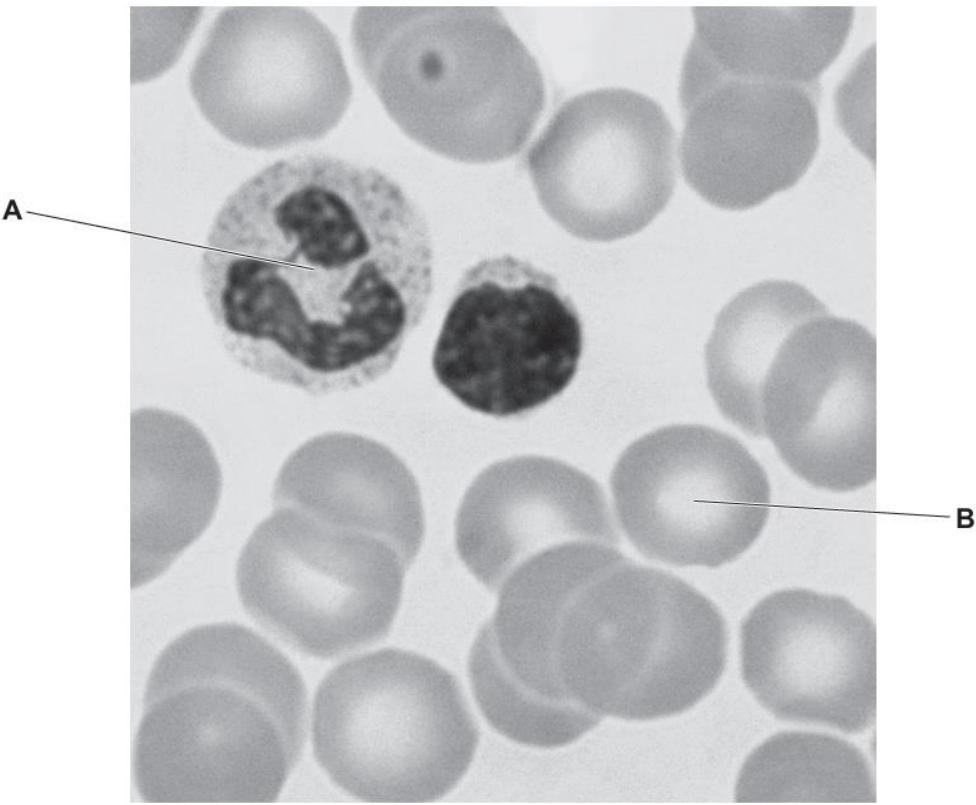


Fig. 3.1

(a) Identify and describe the functions of the cells labelled **A** and **B** in Fig. 3.1.

[4]

(b) Describe how platelets in the blood prevent disease.

.....  
.....  
.....  
.....  
.....

[2]

(c) Blood plasma transports many substances including excretory products and hormones.

(i)  (Circle) the names of **two** excretory products in humans.

amino acids      cellulose      carbon dioxide      glucose

lipase      oxygen      urea

[2]

(ii) State the names of **two** hormones that are produced by the reproductive organs.

1 .....

2 .....

[2]

[Total: 10]

3 (a) Fig. 2.1 is a photomicrograph of human blood.

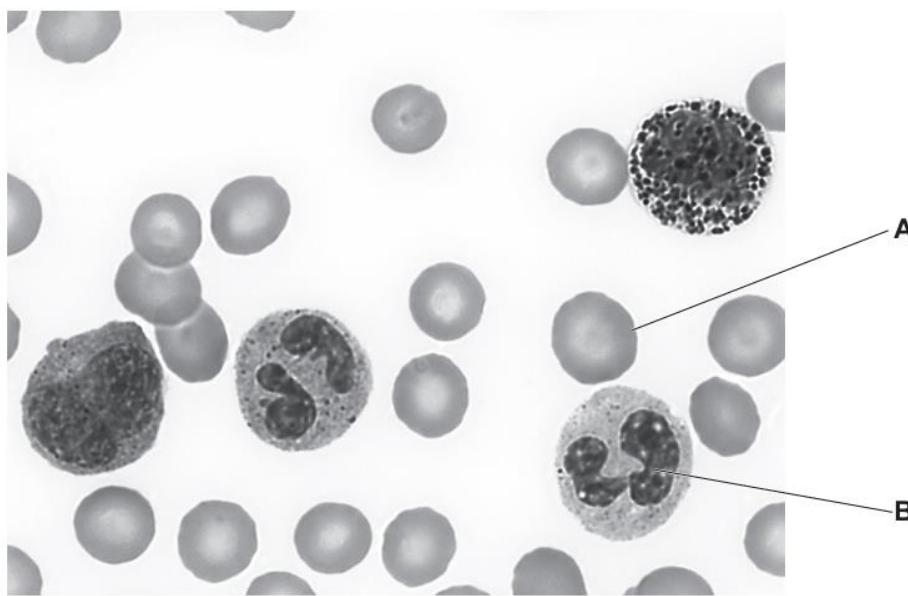


Fig. 2.1

(i) Use the information in Fig. 2.1 to complete Table 2.1 by stating **one** function for each cell.

Table 2.1

identifying letter in Fig. 2.1	function
A	
B	

[2]

(ii) State the name of the component of blood that transports the cells shown in Fig. 2.1.

..... [1]

4 (b) Fig. 6.1 is a photomicrograph of blood.

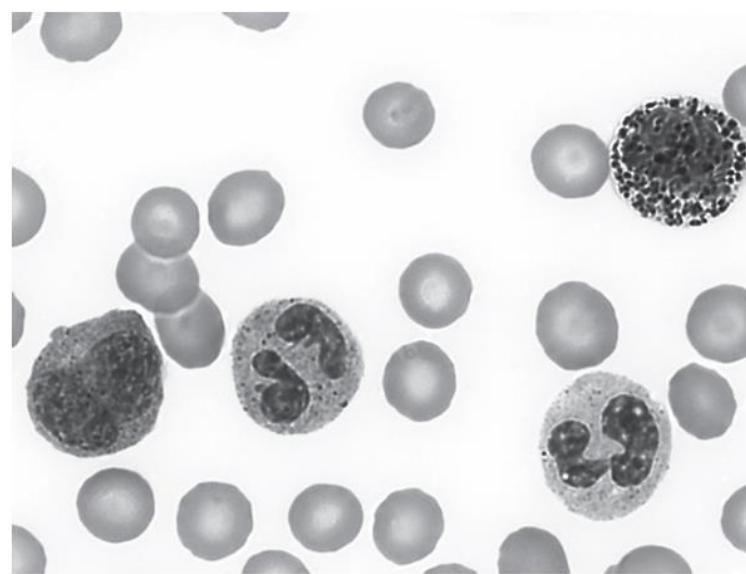


Fig. 6.1

(i) Label **one** red blood cell on Fig. 6.1 with a label line and the letter **X**. [1]

(ii) State the name of **one** other type of blood cell in Fig. 6.1.  
..... [1]

(iii) State the names of **two** other components of blood.  
1 .....  
2 ..... [2]

5 (b) Fig. 7.1 shows a photomicrograph of a capillary with red blood cells passing through it.

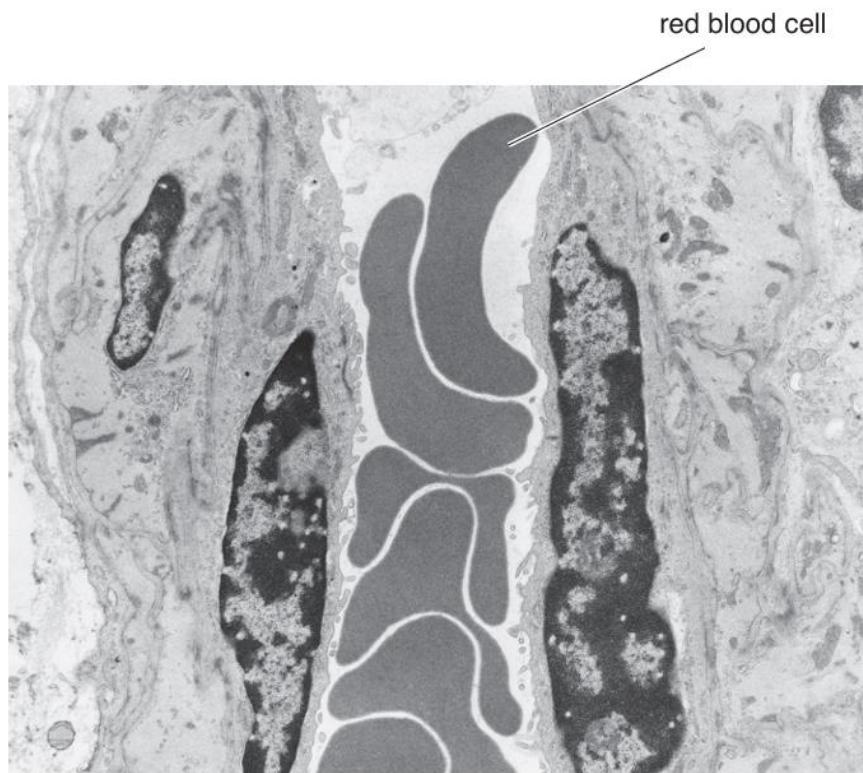


Fig. 7.1

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

..... [1]

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

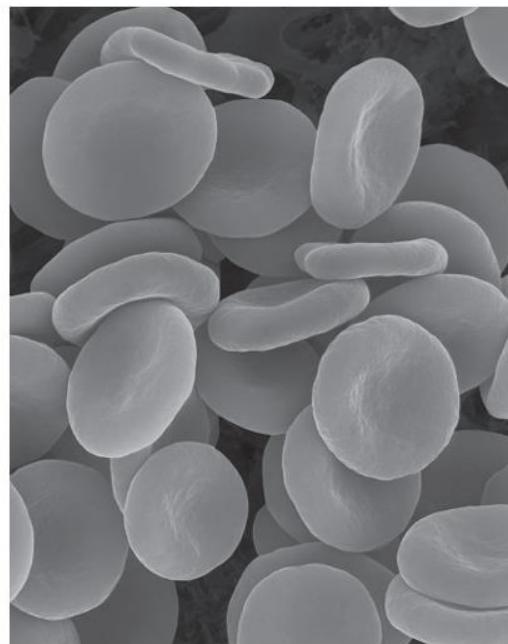
State the name of **two** other components of blood.

1 .....

2 .....

[2]

6 Fig. 8.1 shows a photomicrograph of some red blood cells.



**Fig. 8.1**

(a) (i) State the function of a red blood cell.

..... [1]

(ii) State **two** ways in which a red blood cell is adapted to its function.

1 .....

.....

2 .....

.....

[2]

(b) State the name of a component of blood that is responsible for clotting.

..... [1]

(c) (i) State the name of the disease caused by a blockage in the arteries supplying the heart muscle.

..... [1]

(ii) List **three** risk factors that increase the risk of a blockage in the arteries supplying the heart muscle.

1 .....

2 .....

3 .....

[3]

## **Paper 4**

**Questions are applicable for both core and extended candidates unless indicated in the question**

7 (a) Red blood cells are specialised cells that transport oxygen.

State the substance in red blood cells that combines with oxygen.

..... [1]

(b) State the name of the component of blood that promotes blood clotting.

..... [1]

8 Fig. 5.1 shows a photomicrograph of human blood.

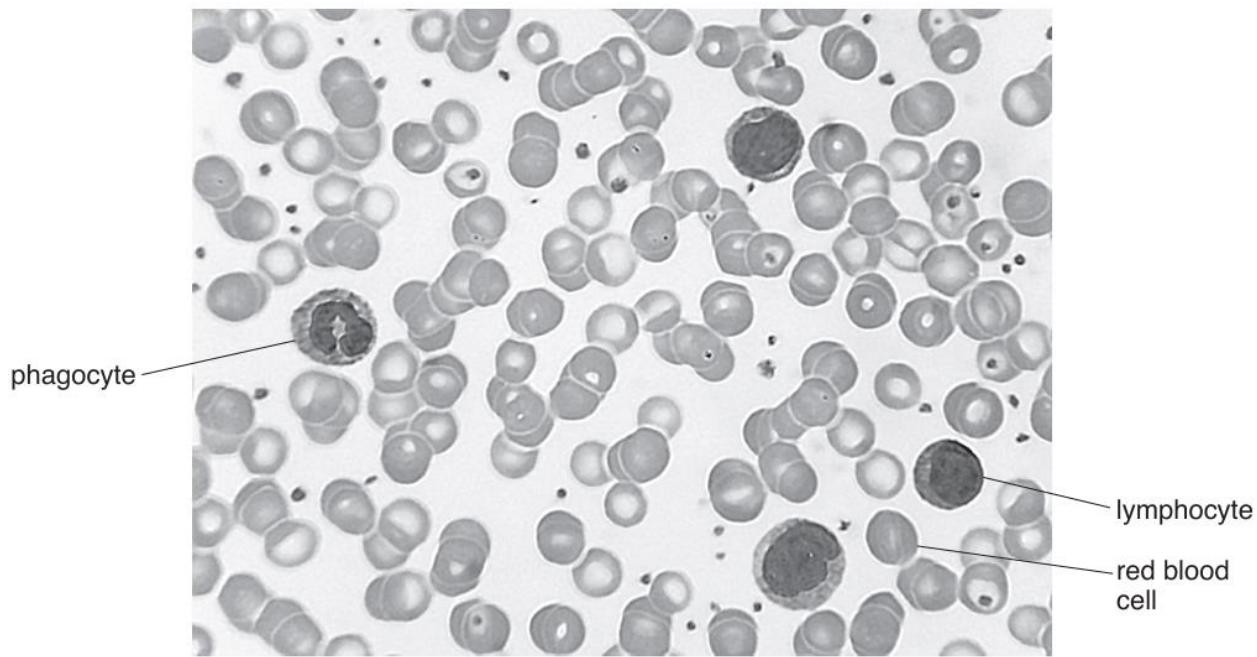


Fig. 5.1

(a) Describe the differences in appearance and the roles of the **three** cells labelled in Fig. 5.1. **(extended only)**

. [6]

(b) Fig. 5.2 shows some of the stages of blood clotting.

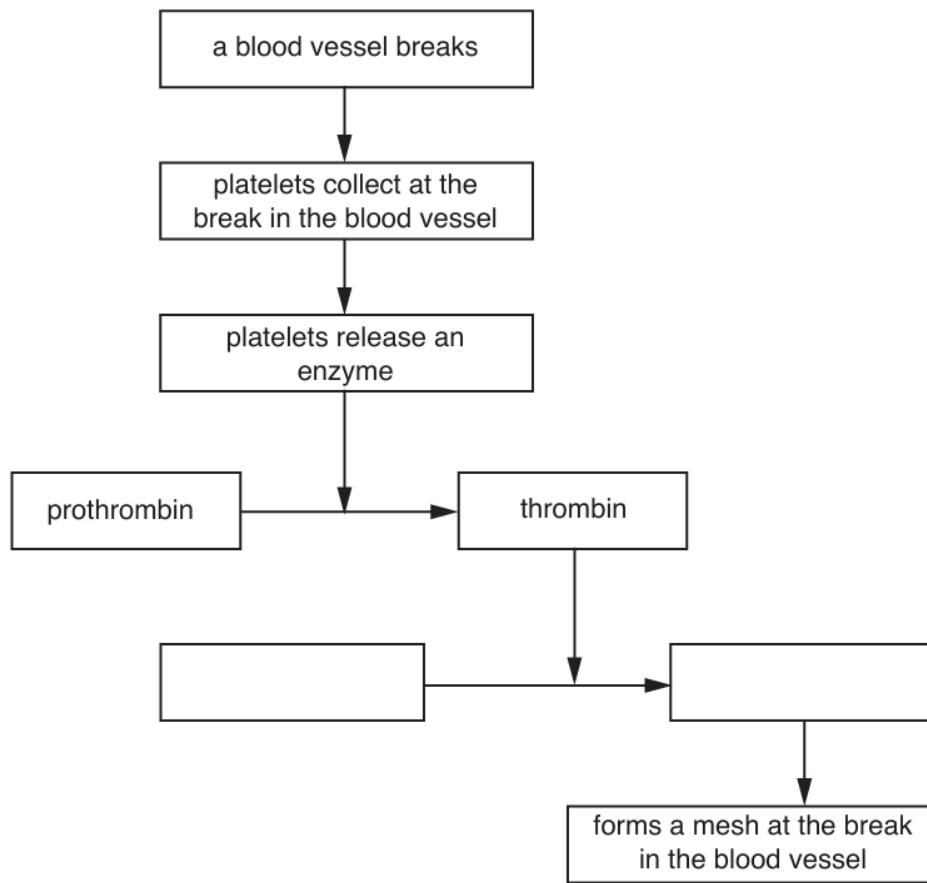


Fig. 5.2

(i) Complete Fig. 5.2 by filling in the **two** empty boxes. (extended only) [1]

(ii) State **two** roles of blood clotting.

.....

.....

.....

.....

.....

[2]