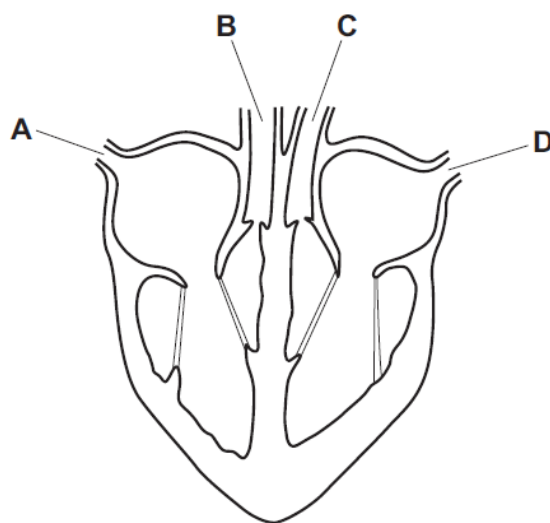


Transport in animals – 2021 IGCSE 0610

1. Nov/2021/Paper_11/No.19

The diagram shows a section through a mammalian heart.

Which part carries blood directly from the lungs?



2. Nov/2021/Paper_11/No.20

Which component of blood produces antibodies?

- A red blood cells
- B white blood cells
- C platelets
- D plasma

3. Nov/2021/Paper_12/No.19

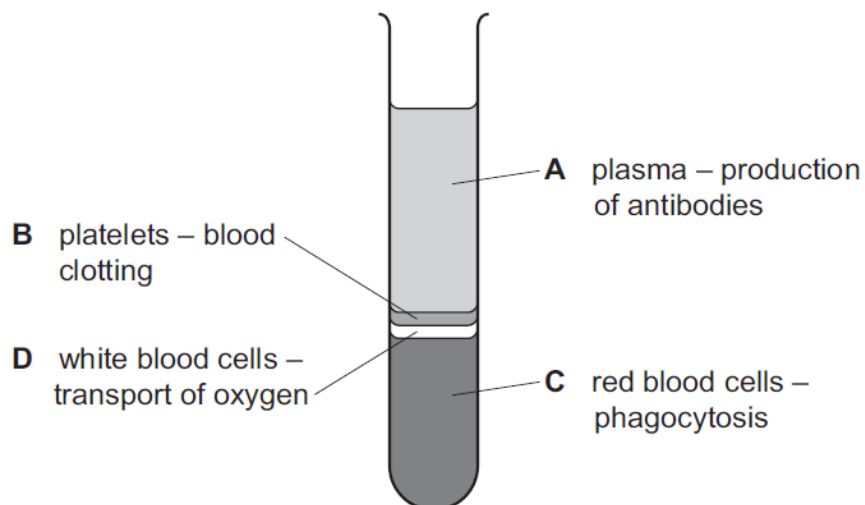
What do shunt vessels connect?

- A arterioles to capillaries
- B arterioles to venules
- C capillaries to lymphatic vessels
- D capillaries to venules

4. Nov/2021/Paper_12/No.20

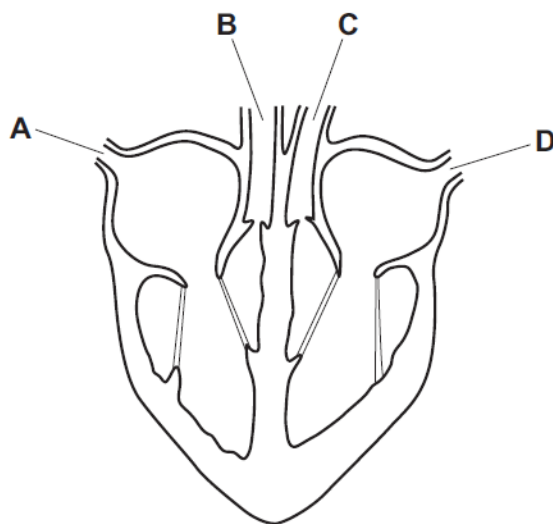
The diagram shows the four components of blood separated into layers.

Which component is labelled with the correct function?

**5. Nov/2021/Paper_13/No.19**

The diagram shows a section through a mammalian heart.

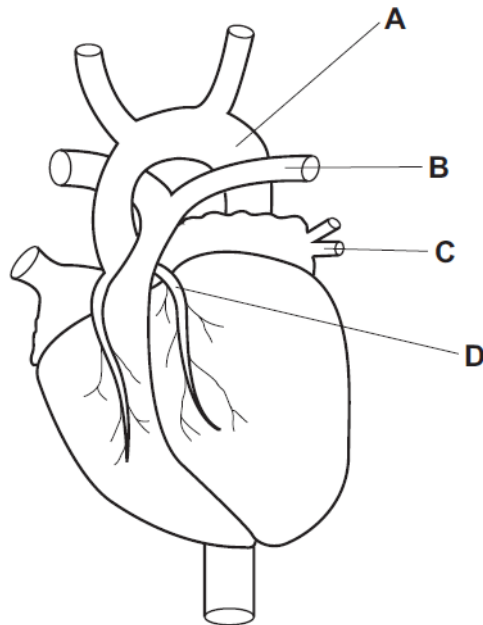
Which part carries blood directly from the lungs?



6. Nov/2021/Paper_13/No.20

The diagram shows the external structure of the human heart.

Which label identifies a coronary artery?



7. Nov/2021/Paper_22/No.18

Which component of blood produces antibodies?

- A lymphocytes
- B phagocytes
- C plasma
- D red blood cells

8. Nov/2021/Paper_22/No.19

What do shunt vessels connect?

- A arterioles to capillaries
- B arterioles to venules
- C capillaries to lymphatic vessels
- D capillaries to venules

9. Nov/2021/Paper_23/No.18

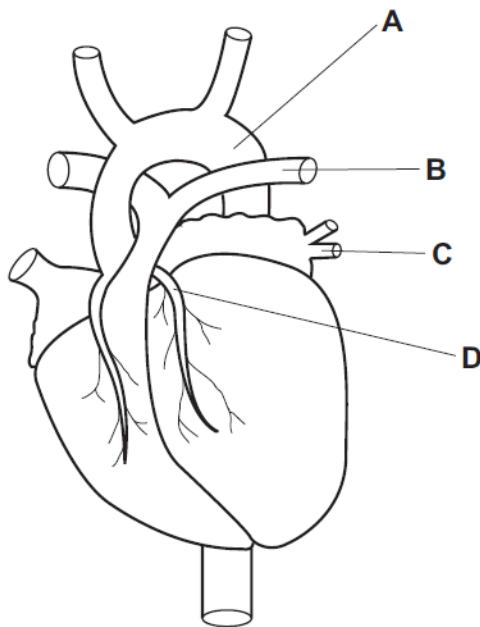
Which component of blood produces antibodies?

- A lymphocytes
- B phagocytes
- C plasma
- D red blood cells

10. Nov/2021/Paper_23/No.19

The diagram shows the external structure of the human heart.

Which label identifies a coronary artery?



11. Nov/2021/Paper_31/No.5

(a) Complete the sentences using the words or phrases from the list.

Each word or phrase may be used once, more than once or not at all.

different from	divide	embryo	gamete	fuse
fetus	identical to	meiosis	mitosis	zygote

In sexual reproduction, each parent organism produces a sex cell called a

..... . These cells are produced by a type of cell division called

..... .

The nuclei of two sex cells to form a

..... in a process called fertilisation.

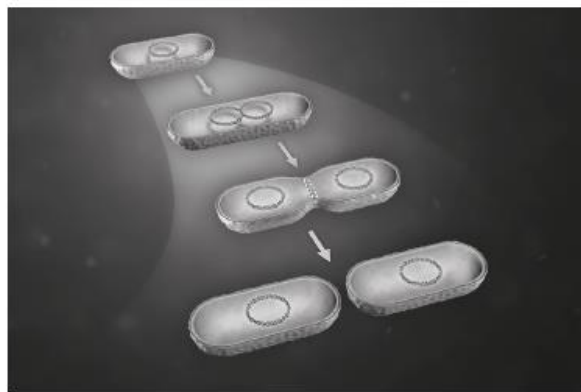
The offspring are genetically each other and their parents.

[5]

(b) Fig. 5.1 shows four examples of reproduction in living organisms.



Q a sperm cell reaching an egg cell



R a single bacterial cell dividing



S a strawberry plant with offspring connected by a runner



T an insect pollinating a flower

Fig. 5.1

State the **two** letters in Fig. 5.1 that identify examples of asexual reproduction.

..... and

[2]

- (c) Fig. 5.2 is a diagram showing all of the chromosome pairs in a cell from a human male. The twenty-third pair of chromosomes are the sex chromosomes.

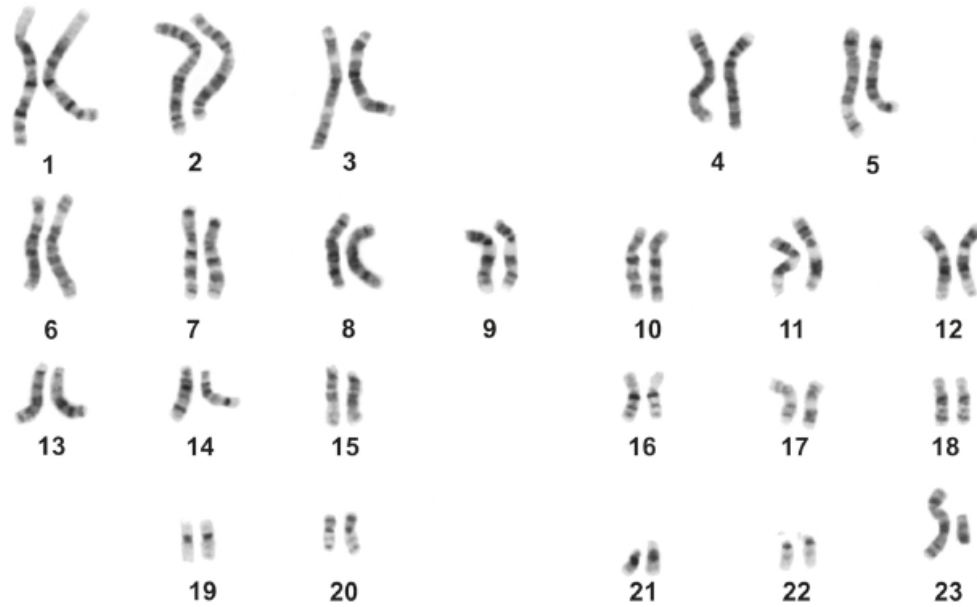


Fig. 5.2

Describe how the chromosomes in a human female differ from those shown in Fig. 5.2.

.....

.....

..... [1]

- (d) Describe how insect-pollinated flowers are adapted for pollination.

.....

.....

.....

.....

.....

.....

.....

.....

..... [4]

[Total: 12]

(a) Explain how the structures of the heart ensure that blood flows in one direction.

[4]

The diagram illustrates the structure and function of a nephron, the basic unit of the kidney. It shows the following components and processes:

- Glomerulus:** A cluster of capillaries where blood filtration occurs. It is surrounded by the **Bowman's capsule** (labeled J).
- Proximal Convoluted Tubule (PCT):** The first part of the renal tubule, which reabsorbs most of the water and solutes from the filtrate.
- Loop of Henle:** A U-shaped tube that descends into the renal medulla to create an osmotic gradient for water reabsorption.
- Distal Convoluted Tubule (DCT):** The second part of the renal tubule, which reabsorbs sodium and water.
- Collecting Duct:** The final part of the renal tubule that carries the concentrated urine to the renal pelvis.
- Blood Flow:** Indicated by arrows, showing the flow from the glomerulus through the tubules and back to the collecting duct.
- Filtrate Flow:** Indicated by dashed arrows, showing the flow from the glomerulus through the tubules and into the collecting duct.

Key: → indicates the direction of blood flow

not to scale

Fig. 5.1

Table 5.1 shows the functions of some blood vessels.

Complete Table 5.1 by:

- naming the type of blood vessel
- stating the letter of the type of blood vessel from Fig. 5.1.

Table 5.1

function	type of blood vessel	letter on Fig. 5.1
regulates blood flow by constricting and dilating		
collects blood from a network of the narrowest blood vessels		
withstands the highest blood pressure		
allows the transfer of substances to and from tissue fluid		
transports blood towards the heart		
redirects blood flow deeper under the surface of the skin		

[6]

(c) State the name of the blood vessels that deliver blood to the:

kidneys

heart muscle

[2]

(d) Describe how blockages in the vessels that deliver blood to the heart muscle can be treated.

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [4]

[Total: 16]