

20 Which statements are correct for a healthy person?

- 1 Blood leaving a glomerulus has the same concentration of glucose as blood entering a glomerulus.
- 2 There is no glucose in the fluid leaving a nephron.
- 3 A nephron reabsorbs all of the water and some of the ions filtered out of the blood by a glomerulus.

A 1 and 3 **B** 1 only **C** 2 and 3 **D** 2 only

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14 Which row names the blood vessel containing the highest blood urea concentration and the blood vessel containing the lowest blood urea concentration?

	highest blood urea concentration	lowest blood urea concentration
A	hepatic artery	hepatic vein
B	hepatic vein	renal vein
C	hepatic portal vein	renal artery
D	renal vein	hepatic portal vein

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19 What shows the pathway of urea from where it is produced to where it is excreted?

- A** kidney → renal artery → heart → lungs → heart → renal vein → bladder
- B** kidney → renal vein → heart → lungs → heart → renal artery → bladder
- C** liver → hepatic artery → heart → lungs → heart → renal artery → kidney
- D** liver → hepatic vein → heart → lungs → heart → renal artery → kidney

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20 What is a role of the glomerulus?

- A** assembling amino acids into proteins
- B** filtration of water, glucose, urea and ions from the blood
- C** reabsorption of glucose, ions and water back into the blood
- D** removal of the nitrogen-containing part of amino acids to form urea

23 Which organ produces urea?

- A** bladder
- B** kidney
- C** liver
- D** pancreas

21 What is filtered out of the blood in the glomerulus and into the nephron?

	glucose	urea
A	yes	yes
B	yes	no
C	no	yes
D	no	no

22 What can be broken down to form urea?

- A** amino acids
- B** fatty acids
- C** sugars
- D** vitamins

4 The kidney is an organ in the excretory system.

(a) Describe what is meant by the term excretion.

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.....

..... [2]

(b) State the name of the substance excreted by the lungs.

..... [1]

(c) Fig. 4.1 shows a simplified diagram of a cross-section of a kidney.

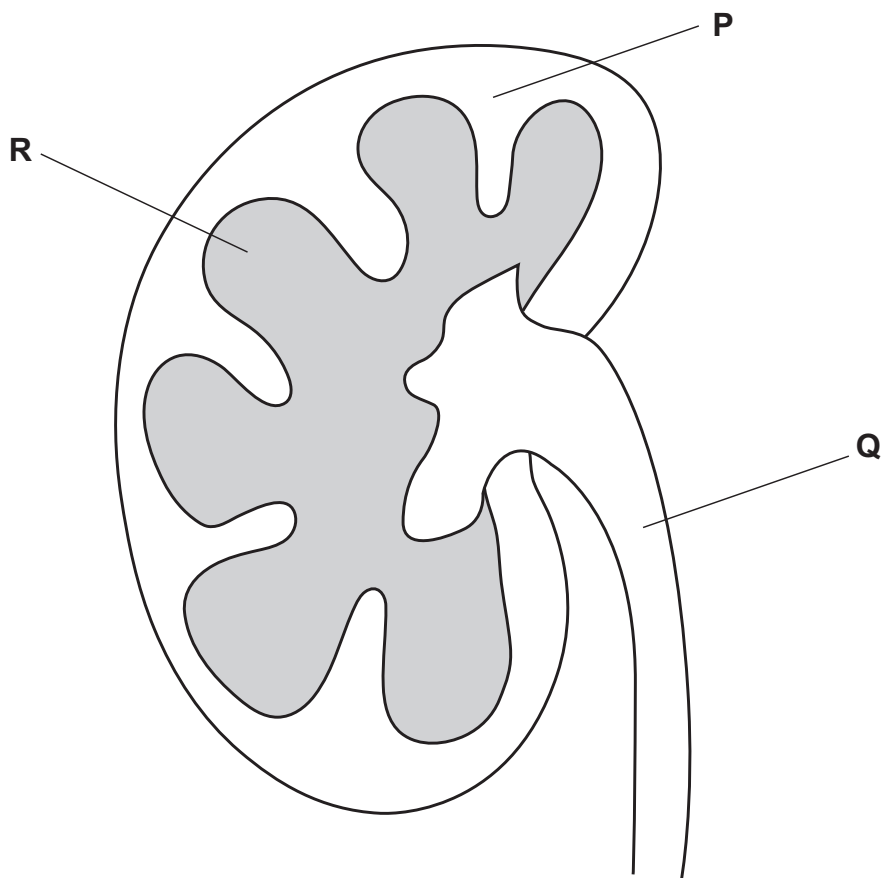


Fig. 4.1

State the names of the parts labelled **P**, **Q** and **R** in Fig. 4.1.

P

Q

R

[3]

(d) Fig. 4.2 shows the structure of a kidney nephron.

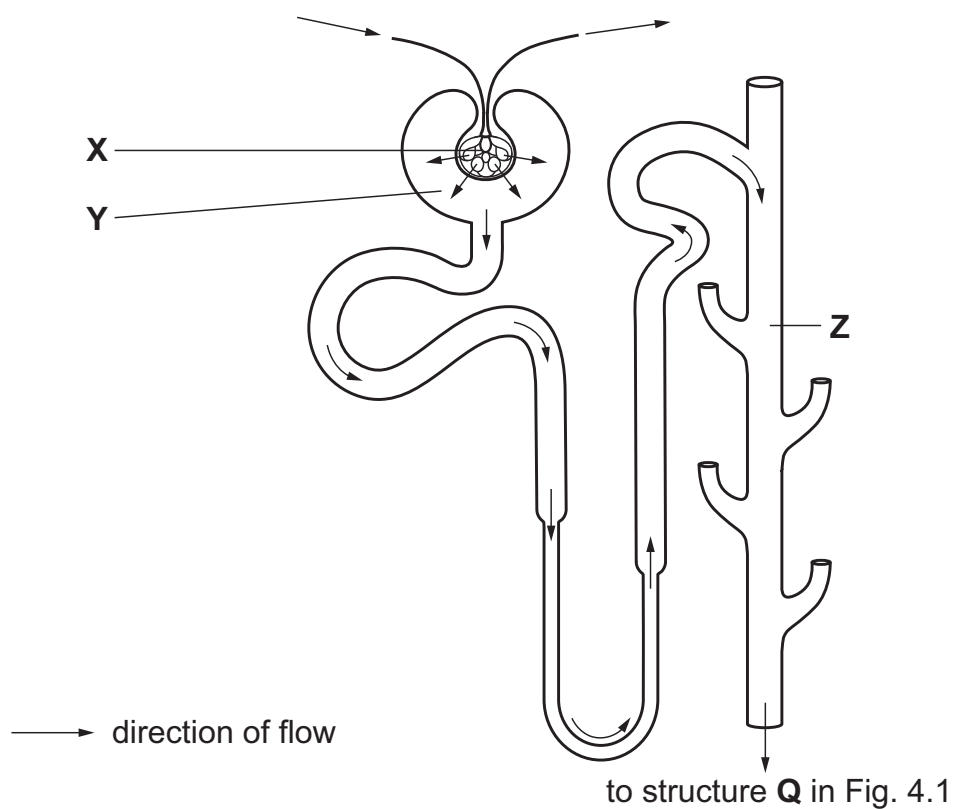


Fig. 4.2

Describe **and** explain the difference in the composition of the fluids in structures **X**, **Y** and **Z** in Fig. 4.2.

[illegible]

(e) The liver is also involved in excretion.

Describe **two** ways that amino acids are processed in the liver.

1

2

[2]

[Total: 14]

20 In a healthy human, in which blood vessel would you find the **lowest** concentration of urea?

- A** hepatic artery
- B** hepatic vein
- C** renal artery
- D** renal vein