5090 Biology Paper 1 - Excretion

Topical questions | 17 questions

1. Question | 5090 May-June 2023 P1 V1 Q23

23 The blood in the renal vein has a different composition to the blood in the renal artery.

How is the blood in the renal vein different?

A less carbon dioxide, less urea, less water

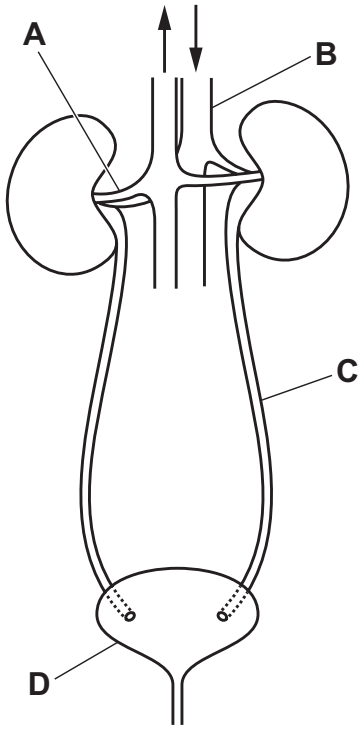
B less oxygen, more urea, less water

C more carbon dioxide, less urea, less water

D more oxygen, less urea, less water

2. Question | 5090 May-June 2023 P1 V2 Q23

23 In which structure is there a fluid with a low concentration of urea?



3. Question | 5090 Oct-Nov 2023 P1 V1 Q23

23 Some people require a treatment called dialysis to remove waste products and excess salts from their blood.

For these individuals, which part of the body is **not** functioning correctly?

A bladder

B heart

C kidney

D ureter

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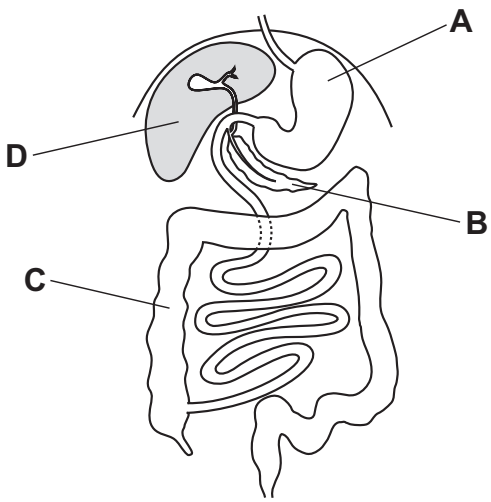
4. Question | 5090 Oct-Nov 2023 P1 V2 Q23

23 Which label shows the location for the production of urea?



5. Question | 5090 Specimen 2023 P1 Q23

23 Which row matches the parts of the urinary system to their functions?

	makes urine	carries urine	holds urine	removes urine from body
A	bladder	ureter	urethra	kidney
B	bladder	urethra	ureter	kidney
C	kidney	ureter	bladder	urethra
D	kidney	urethra	bladder	ureter

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6. Question | 5090 May-June 2024 P1 V1 Q22

22 Which row identifies the contents of urine in a healthy person?

	glucose	urea	water	ions
A	✓	✗	✓	✗
B	✓	✓	✓	✓
C	✗	✗	✓	✓
D	✗	✓	✓	✓

7. Question | 5090 May-June 2024 P1 V2 Q21

21 What is an example of excretion?

A release of a hormone into the blood

B removal of carbon dioxide from the lungs

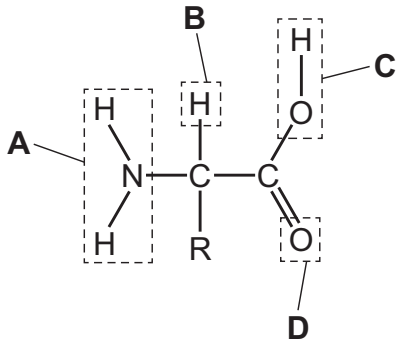
C removal of undigested food from the digestive system

D release of water from the sweat glands

8. Question | 5090 May-June 2024 P1 V2 Q22

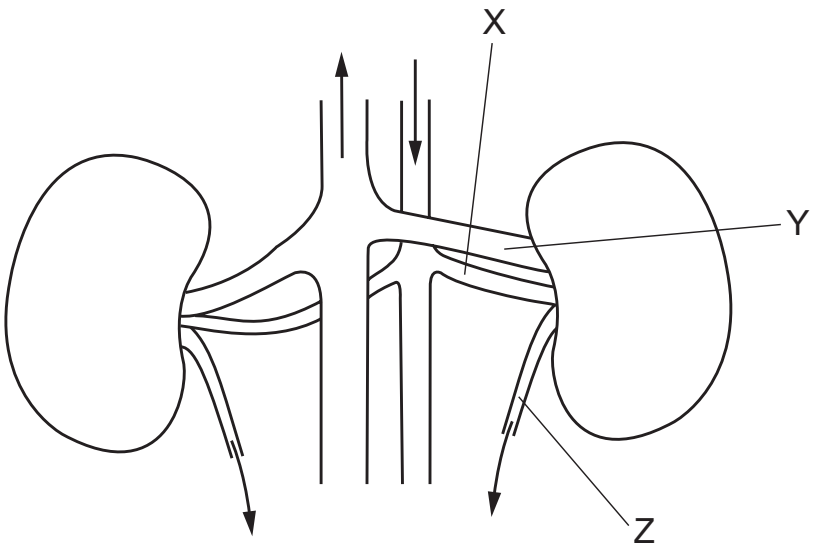
22 The diagram shows an amino acid molecule.

Which part of the amino acid molecule is removed and used to make urea?



9. Question | 5090 Oct-Nov 2024 P1 V1 Q22

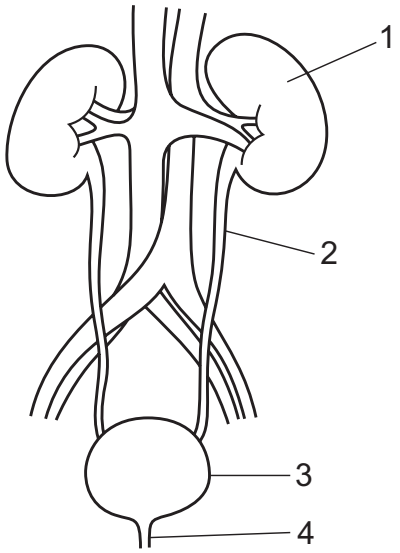
22 The diagram shows part of the human urinary system.



What are structures X, Y and Z?

	X	Y	Z
A	artery	vein	ureter
B	artery	vein	urethra
C	vein	artery	ureter
D	vein	artery	urethra

22 The diagram shows the excretory system.

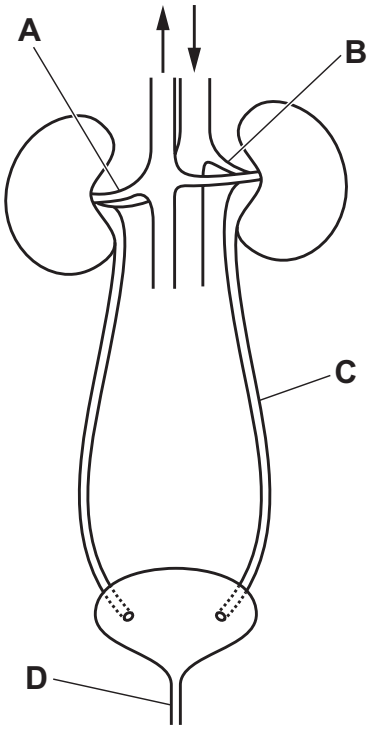


Which row identifies the names of the labelled structures?

	1	2	3	4
A	bladder	ureter	kidney	urethra
B	bladder	urethra	kidney	ureter
C	kidney	ureter	bladder	urethra
D	kidney	urethra	bladder	ureter

11. Question | 5090 May-June 2025 P1 V1 Q23

23 Which structure is the ureter?



12. Question | 5090 May-June 2025 P1 V1 Q24

24 The processes of filtration and reabsorption take place in the kidneys.

The daily amounts of some of the substances entering the kidneys in the blood and of these substances leaving the kidneys in the urine are shown.

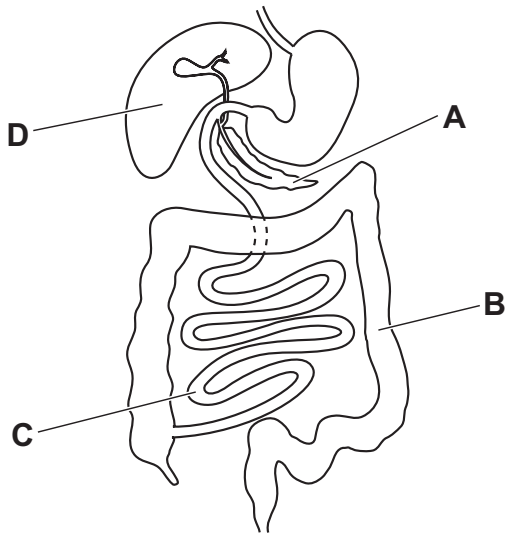
substance	amount entering the kidneys in the blood	amount leaving the kidneys in the urine
water	150 dm^3	1.5 dm^3
glucose	150 g	0 g
urea	50 g	30 g

Which percentage of each substance is reabsorbed by the kidneys during a day?

	% of substance reabsorbed by kidneys		
	water	glucose	urea
A	99	100	40
B	148.5	150	20
C	0.99	1.0	0.4
D	1.0	0.0	60

13. Question | 5090 May-June 2025 P1 V2 Q25

25 Which letter shows where urea is produced?



14. Question | 5090 May-June 2025 P1 V2 Q26

26 Which substance would **not** be present in the urine of a healthy person with a normal diet?

A glucose

B salts

C urea

D water

21 The table shows the concentration of five substances in the blood entering the kidney, in fluid entering the nephron and in the urine.

substance	concentration / mg per dm^3		
	blood entering the kidney	fluid entering the nephron	urine
urea	0.4	20.0	20.0
glucose	1.5	1.5	0.0
amino acids	0.8	0.8	0.0
ions	8.0	8.0	16.5
protein	82.0	0.0	0.0

Which substances are totally reabsorbed into the blood from the nephron?

A amino acids and glucose

B glucose and ions

C protein and amino acids

D protein and glucose

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16. Question | 5090 Oct-Nov 2025 P1 V2 Q23

23 Which term can be used to describe the release of oxygen from plants?

A breathing

B excretion

C respiration

D transpiration

17. Question | 5090 May-June 2026 P1 V2 Q24

24 The normal mass of urea excreted in urine in 24 hours by a man is between 12 and 20 g.

One man excretes only 7 g of urea in his urine over a 24-hour period.

What could **not** be the reason for this low mass of urea?

A The man had low levels of protein in his diet.

B The man's kidneys were functioning incorrectly.

C The man had low levels of salts in his diet.

D The man's liver was functioning incorrectly.