Chapter 13

Excretion in humans

13.1 Excretion in humans

01. 0610_m22_qp_22 Q: 24

Which term describes the removal of the nitrogen-containing part of amino acids to form urea?

A assimilation

B deamination

C denaturation

D digestion

---

02. 0610_s21_qp_21 Q: 25

Which statement about urea is correct?

A Urea is formed from excess amino acids in the kidneys and excreted by the liver.

B Urea is formed from excess glucose in the liver and egested by the kidneys.

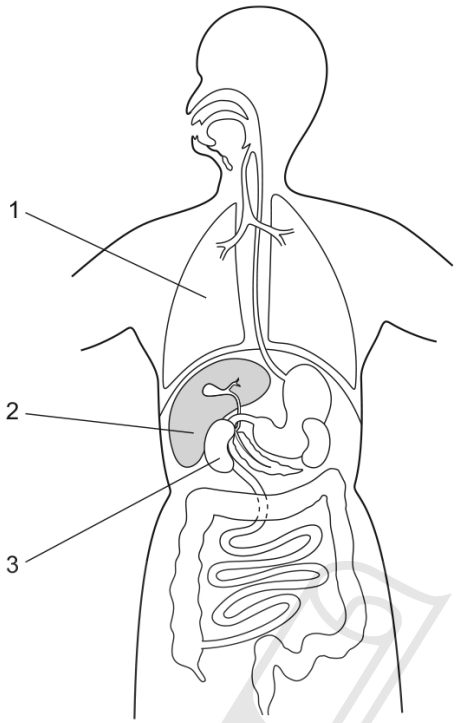
C Urea is formed from excess glucose in the kidneys and egested by the liver.

D Urea is formed from excess amino acids in the liver and excreted by the kidneys.

---

03. 0610_s21_qp_22 Q: 25

The diagram shows some of the organs in the human body.



Which row matches the function to the correct organ?

	excretes carbon dioxide	excretes urea	produces urea
A	1	2	3
B	1	3	2
C	2	3	1
D	2	1	3

04. 0610_s21_qp_23 Q: 25

A student carried out an experiment to investigate the effect of temperature on the volume of urine produced.

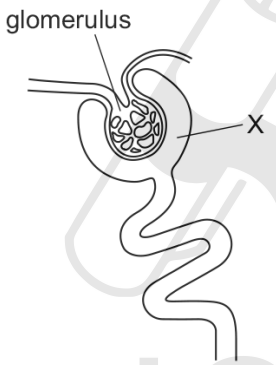
Which row shows the experiment where the environmental temperature was increased from 20 °C to 40 °C but no other changes were made?

	urine produced / cm^3 per hour	
	before	after
A	60	60
B	80	40
C	120	145
D	100	130

---

05. 0610_w21_qp_21 Q: 23

The diagram shows the structure of part of a kidney tubule and associated blood vessels.



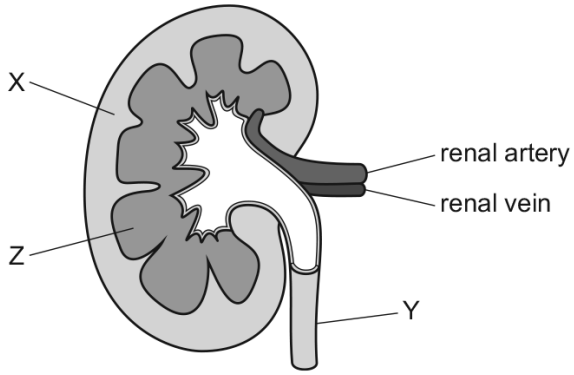
Which substances are normally present in the filtrate at X?

	glucose	urea
A	absent	absent
B	absent	present
C	present	absent
D	present	present

---

06. 0610_w21_qp_22 Q: 24

The diagram shows a mammalian kidney.



What are areas X, Y and Z?

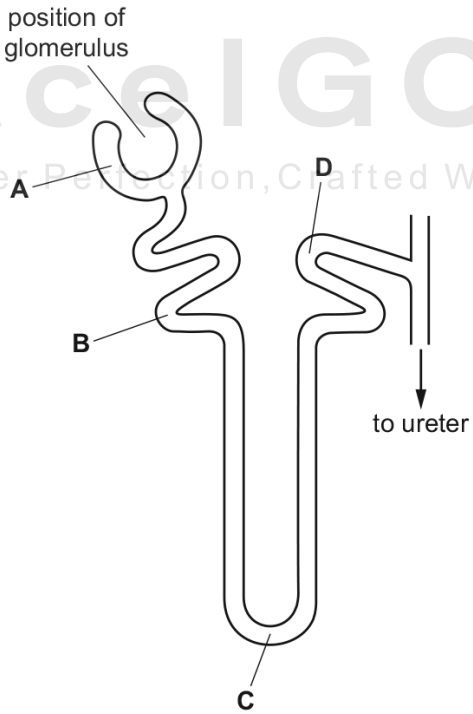
	X	Y	Z
A	cortex	medulla	ureter
B	cortex	ureter	medulla
C	medulla	cortex	ureter
D	medulla	ureter	medulla

---

07. 0610_w21_qp_23 Q: 24

The diagram shows a kidney tubule.

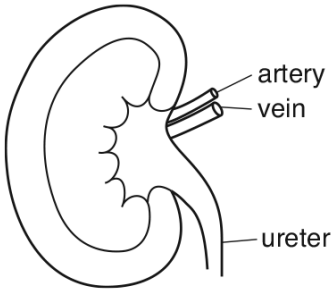
In which part of the tubule is the glucose concentration highest?



---

08. 0610_m20_qp_22 Q: 25

The diagram shows a kidney and its blood vessels.



In a healthy person, which structure(s) transport glucose?

A artery only

B artery and ureter

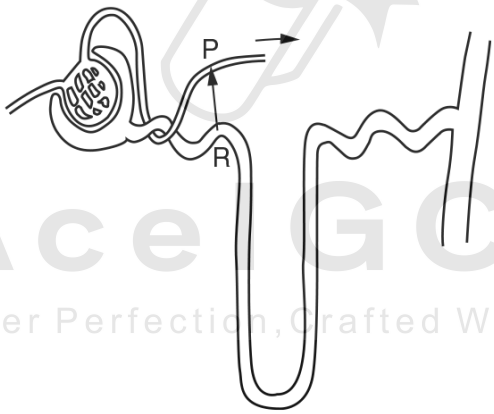
C artery and vein

D ureter and vein

---

09. 0610_p20_qp_20 Q: 20

The diagram shows a kidney tubule and some of its associated blood vessels.



Which substance is entirely reabsorbed from the fluid at R to the blood at P?

A glucose

B salts

C urea

D water

---

10. 0610_s20_qp_21 Q: 23

In healthy people, which substance is completely reabsorbed into the blood from the kidney tubules?

A glucose

B salts

C urea

D water

---

11. 0610_s20_qp_22 Q: 23

What is filtered out of the blood in the glomerulus into the kidney tubule?

	glucose	urea
A	✓	✓
B	✓	✗
C	✗	✓
D	✗	✗

key

✓ = yes

✗ = no

---

12. 0610_s20_qp_23 Q: 22

Blood glucose level is kept between 5–7 mmol per dm^3. The concentration of glucose in the intestine varies and is often less than that value.

What would be required for the absorption of glucose into the blood when the concentration of glucose in the intestine is less than 5 mmol per dm^3?

1 mitochondria

2 oxygen

3 membrane proteins

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

---

13. 0610_w20_qp_21 Q: 22

The table shows the composition of blood entering and leaving the liver and the kidneys.

Which row is correct?

	highest concentration of urea in the blood	lowest concentration of urea in the blood
A	entering kidneys	leaving liver
B	entering kidneys	entering liver
C	leaving kidneys	entering liver
D	leaving kidneys	leaving liver

---

14. 0610_w20_qp_22 Q: 22

How do the concentrations of glucose and urea in urine compare to their concentrations in blood plasma?

	glucose concentration in urine (compared to blood plasma)	urea concentration in urine (compared to blood plasma)
A	higher	lower
B	higher	same
C	same	same
D	lower	higher

---

15. 0610_w20_qp_23 Q: 22

What happens as a result of deamination?

A Amino acids are converted to proteins.

B Glycogen is stored.

C Starch is produced.

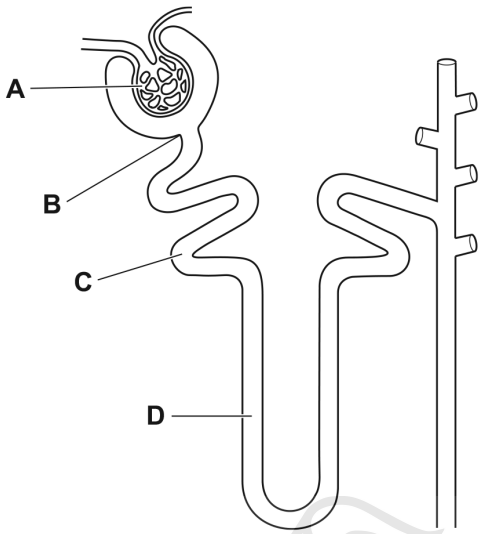
D Urea is produced.

---

16. 0610_m19_qp_22 Q: 24

The diagram shows the structure of a kidney tubule.

Where does filtration occur?



---

17. 0610_s19_qp_21 Q: 25

What is a function of the liver?

A converting bile to urea

B converting urea to amino acids

C deamination of amino acids

D deamination of carbon dioxide

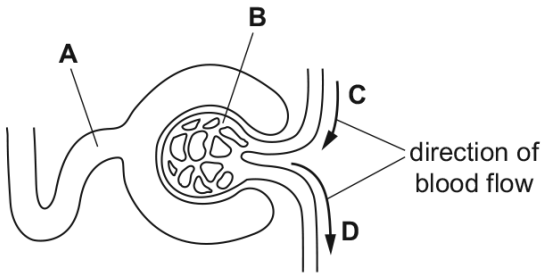
---

18. 0610_s19_qp_22 Q: 25

The diagram shows the first part of a kidney tubule and its blood supply.

During filtration, protein molecules do not pass through the wall of the glomerulus.

Which part contains the highest concentration of protein?



---

19. 0610_s19_qp_23 Q: 25

Dialysis is a method of regulating the composition of blood when the kidneys are not working properly.

Which substance is absent from fresh dialysis fluid?

A bile

B glucose

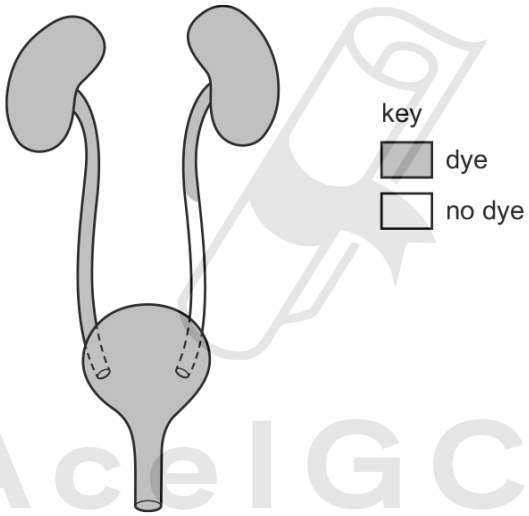
C salt

D water

---

20. 0610_w19_qp_21 Q: 25

A patient has dye injected into the blood supply to his kidneys. The dye appears in his excretory system as shown.



Which part is blocked?

A the kidney

B the ureter

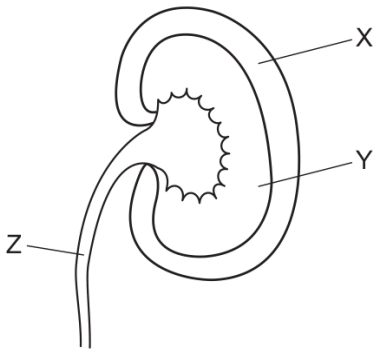
C the bladder

D the urethra

---

21. 0610_m18_qp_22 Q: 18

The diagram shows a section of a kidney.



What are the correct labels?

	X	Y	Z
A	cortex	medulla	ureter
B	cortex	ureter	medulla
C	medulla	cortex	ureter
D	medulla	ureter	cortex

---

22. 0610_s18_qp_21 Q: 22

The table shows the presence or absence of chemicals in solution in different parts of a healthy kidney.

Which row is correct?

	chemical	blood plasma in glomerulus	fluid entering kidney tubule	fluid in ureter
A	glucose	✓	✗	✗
B	protein	✓	✓	✓
C	salts	✓	✗	✗
D	urea	✓	✓	✓

key

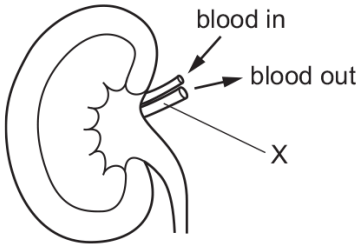
✓ = present

✗ = absent

---

23. 0610_s18_qp_23 Q: 22

The diagram shows a kidney and associated structures.



What is the name of structure X?

A pulmonary artery

B pulmonary vein

C renal artery

D renal vein

---

24. 0610_w18_qp_21 Q: 22

Which row describes the functions of the bladder, kidneys and liver?

	production of urea	excretion of urea	storage of urine
A	liver	bladder	kidneys
B	bladder	kidneys	liver
C	liver	kidneys	bladder
D	kidneys	liver	bladder

---

25. 0610_w18_qp_22 Q: 22

A person carries out vigorous exercise without drinking any water.

What would happen to the concentration and volume of the person's urine immediately after exercise?

	urine concentration	urine volume
A	decrease	decrease
B	decrease	increase
C	increase	decrease
D	increase	increase

---

26. 0610_w18_qp_23 Q: 22

Which row correctly shows the organ where each substance is excreted?

	carbon dioxide	excess water	salts	urea
A	kidneys	liver	lungs	lungs
B	liver	liver	liver	skin
C	lungs	kidneys	kidneys	kidneys
D	lungs	kidneys	liver	skin

---

27. 0610_m17_qp_22 Q: 21

Which substance remains in the blood as it passes through the kidney?

A protein

B salts

C urea

D water

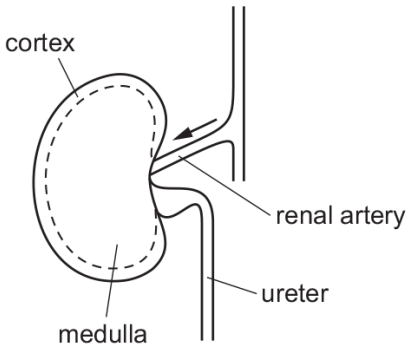
---

28. 0610_s17_qp_21 Q: 22

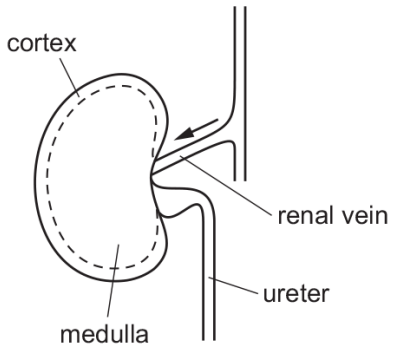
A longitudinal section of the kidney and some associated structures have been labelled.

Which labelling is correct?

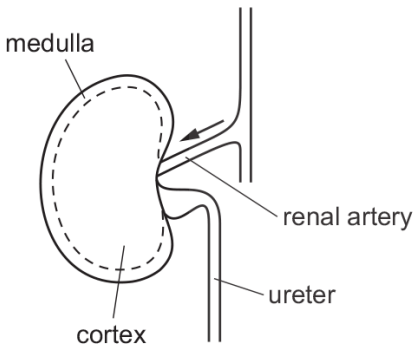
A



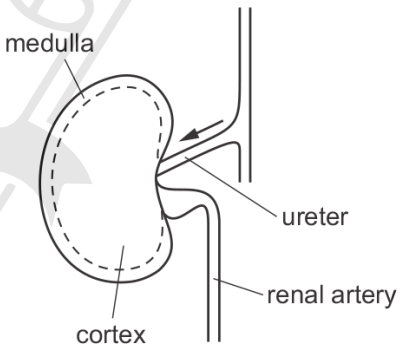
B



C



D



---

29. 0610_s16_qp_21 Q: 24

An amino acid is deaminated. This is the removal of

A the carbon-containing part.

B the nitrogen-containing part.

C the oxygen-containing part.

D the sulfur-containing part.

---

30. 0610_s16_qp_22 Q: 22

Which diet will cause the liver to produce the most urea?

A high carbohydrate, low fat

B high fat, high fibre

C high fat, low protein

D high protein, low carbohydrate

---

31. 0610_s16_qp_23 Q: 23

What is an example of excretion in mammals?

A the release of hormones from glands

B the release of saliva into the mouth

C the removal of undigested food through the anus

D the removal of urea by the kidneys

---

32. 0610_w16_qp_21 Q: 24

What happens as a result of deamination in the liver?

A Alcohol is broken down.

B Glycogen is stored.

C Glucose is produced.

D Urea is produced.

---

33. 0610_w16_qp_22 Q: 25

In a kidney tubule, which substances are filtered out of the blood in the glomerulus?

A glucose, protein, salts and water

B glucose, protein, urea and water

C glucose, salts, urea and water

D protein, salts, urea and water

SN	Paper	Q. No.	Answer
01	0610_m22_qp_22	24	B
02	0610_s21_qp_21	25	D
03	0610_s21_qp_22	25	B
04	0610_s21_qp_23	25	B
05	0610_w21_qp_21	23	D
06	0610_w21_qp_22	24	B
07	0610_w21_qp_23	24	A
08	0610_m20_qp_22	25	C
09	0610_p20_qp_20	20	A
10	0610_s20_qp_21	23	A
11	0610_s20_qp_22	23	A
12	0610_s20_qp_23	22	D
13	0610_w20_qp_21	22	B
14	0610_w20_qp_22	22	D
15	0610_w20_qp_23	22	D
16	0610_m19_qp_22	24	A
17	0610_s19_qp_21	25	C
18	0610_s19_qp_22	25	D
19	0610_s19_qp_23	25	A
20	0610_w19_qp_21	25	B
21	0610_m18_qp_22	18	A
22	0610_s18_qp_21	22	D
23	0610_s18_qp_23	22	D
24	0610_w18_qp_21	22	C
25	0610_w18_qp_22	22	C
26	0610_w18_qp_23	22	C
27	0610_m17_qp_22	21	A
28	0610_s17_qp_21	22	A
29	0610_s16_qp_21	24	B
30	0610_s16_qp_22	22	D
31	0610_s16_qp_23	23	D
32	0610_w16_qp_21	24	D
33	0610_w16_qp_22	25	C