

TOPIC: EXCRETION

Multiple Choice Questions:

1. Urea is produced in one organ, filtered from the blood by a second organ and stored inside a third organ before being expelled from the body.

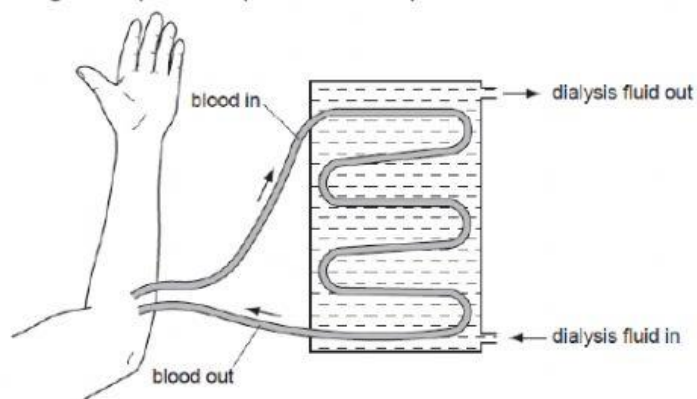
Which organs carry out these functions?

[Nov 2008, Q20]

	Production	Filtration	Storage
A	Kidney	Bladder	Liver
B	Kidney	Liver	Bladder
C	Liver	Bladder	Kidney
D	Liver	Kidney	Bladder

2. The diagram represents part of a kidney machine.

[Nov 2009, Q20]

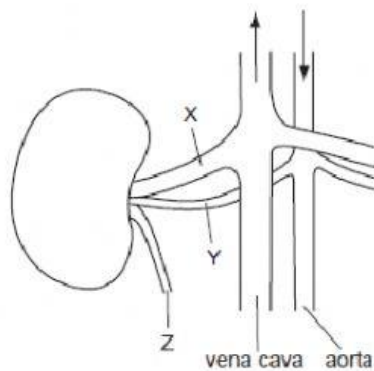


Which substance must be at the same concentration in the dialysis fluid and in the blood?

- A Glucose
- B Salt
- C Urea
- D Water

3. The diagram shows the structures associated with a human kidney.

[Nov 2010, Q15]

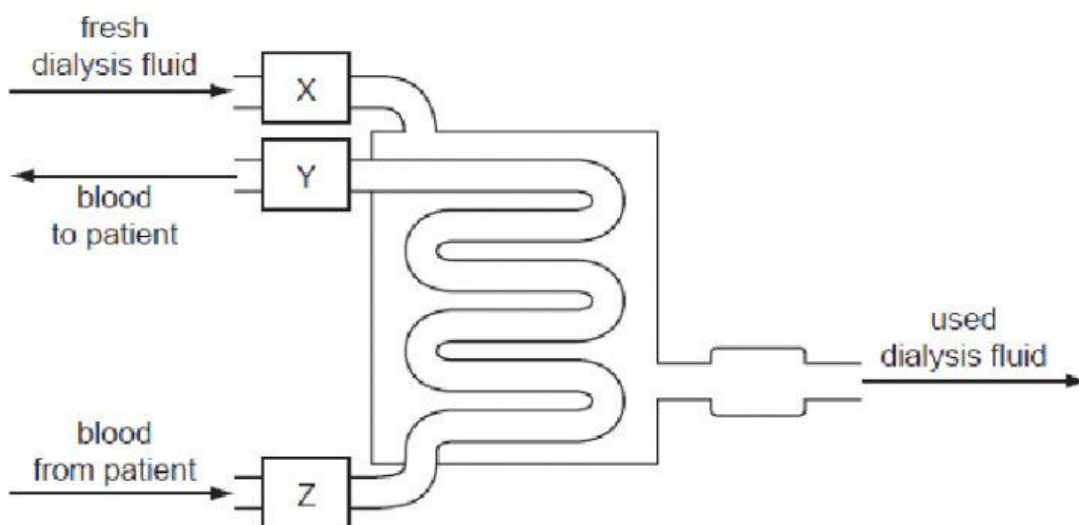


What are the relative concentrations of urea in X, Y and Z?

- A X is sometimes higher than Y
- B Y is always higher than Z
- C Y is always lower than Z
- D Z is sometimes lower than X

4. The diagram represents a kidney dialysis machine.

[Nov 2011, Q18]



What are the parts labelled X, Y and Z?

	Bubble trap	Roller pump	Water bath for temperature control
A	X	Y	Z
B	Y	X	Z
C	Y	Z	X
D	Z	Y	X

5. What is **not** an excretory product of mammals?

[Nov 2012, Q19]

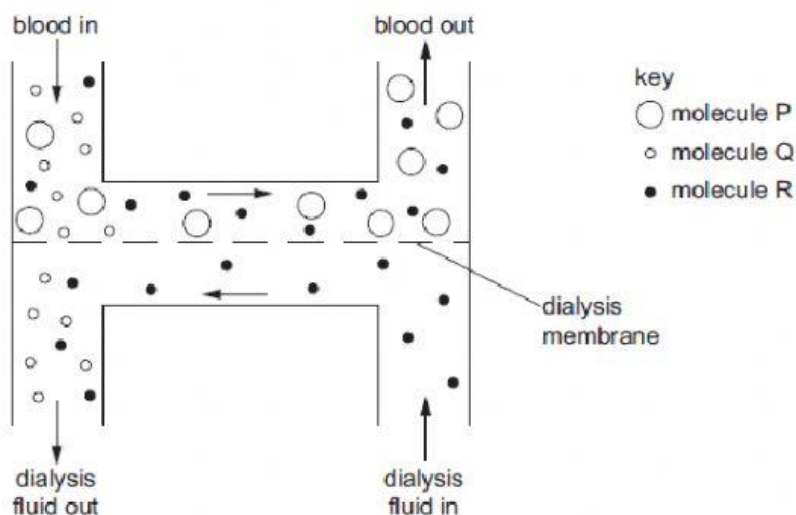
- A Carbon dioxide in expired air
- B Undigested food in faeces
- C Urea in sweat
- D Urea in urine

6. In a kidney dialysis machine, which substance will not diffuse from the patient's blood into the dialysis fluid?

[Nov 2013, Q21]

- A Protein
- B Salts
- C Urea
- D Water

7. The diagram shows what happens to molecules of glucose, protein and urea as blood passes through a kidney dialysis machine. [Nov 2014, Q19]

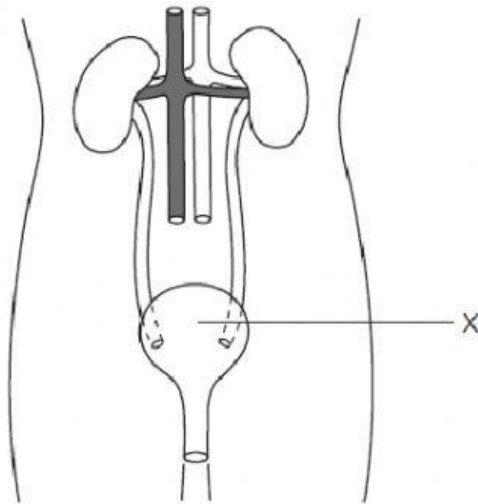


What are molecules P, Q and R?

	Molecule P	Molecule Q	Molecule R
A	Glucose	Protein	Urea
B	Glucose	Urea	Protein
C	Protein	Glucose	Urea
D	Protein	Urea	Glucose

8. The diagram shows the human excretory system.

[June 2009, Q20]



What is the function of X?

- A To excrete urea
- B To produce urea
- C To produce urine
- D To store urine

9. Which **cannot** be an example of excretion?

[June 2010, Q34]

- A Carbon dioxide is breathed out from the lungs
- B Undigested food leaves the body through the anus
- C Urea leaves the body in urine
- D Water is removed through the kidneys

[Total: 9 marks]

Structured Questions:

1. Fig. 1.1 shows a kidney and its associated structures. The arrows show the direction of flow of fluids in these structures.

[Nov 2014, Q1]

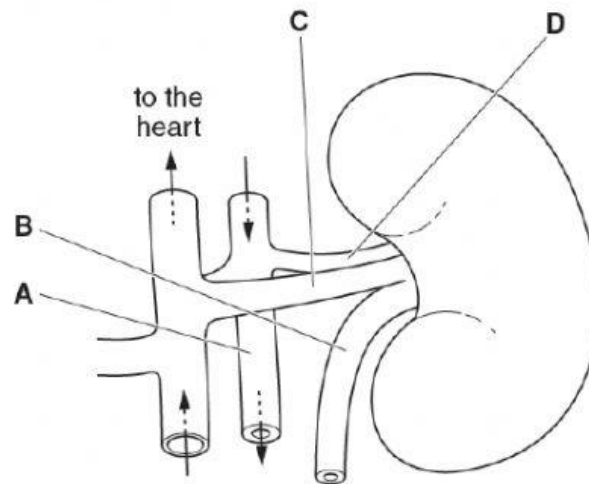


Fig. 1.1

- (a) (i) Name the structure labelled **A** in Fig. 1.1 _____ [1]

- (ii) Name the chamber of the heart through which blood in structure **A** last passed.

_____ [1]

- (b) Table 1.1 shows the relative concentrations of various substances in structures **B** and **C**. Complete the table to show the possible concentrations of these substances in structure **D**.

Table 1.1

substance	relative concentration in structure		
	B	C	D
Amino acids	0.00	0.05	
Glucose	0.00	0.10	
Mineral ions	1.50	0.72	
Proteins	0.00	8.00	
Urea	2.00	0.03	

[5]

- (c) Explain how the relative concentrations of glucose might change in structures **B**, **C** and **D** in a person with diabetes.

[3]

[Total: 10]

2. (a) State **three** substances found in the urine of a healthy person.

[June 2014, Q1]

1 _____

2 _____

3 _____

- (b) The concentration of a person's urine can vary according to their diet.
Explain how changes in a person's diet can affect the concentration of their urine.

[4]

- (c) An investigation was carried out into the effect of diet on the rate of production of urine. Three students each took 1.5 dm^3 of a different drink A, B or C.

Fig. 1.1 shows the volume of urine released by each student over the next two and a half hours.

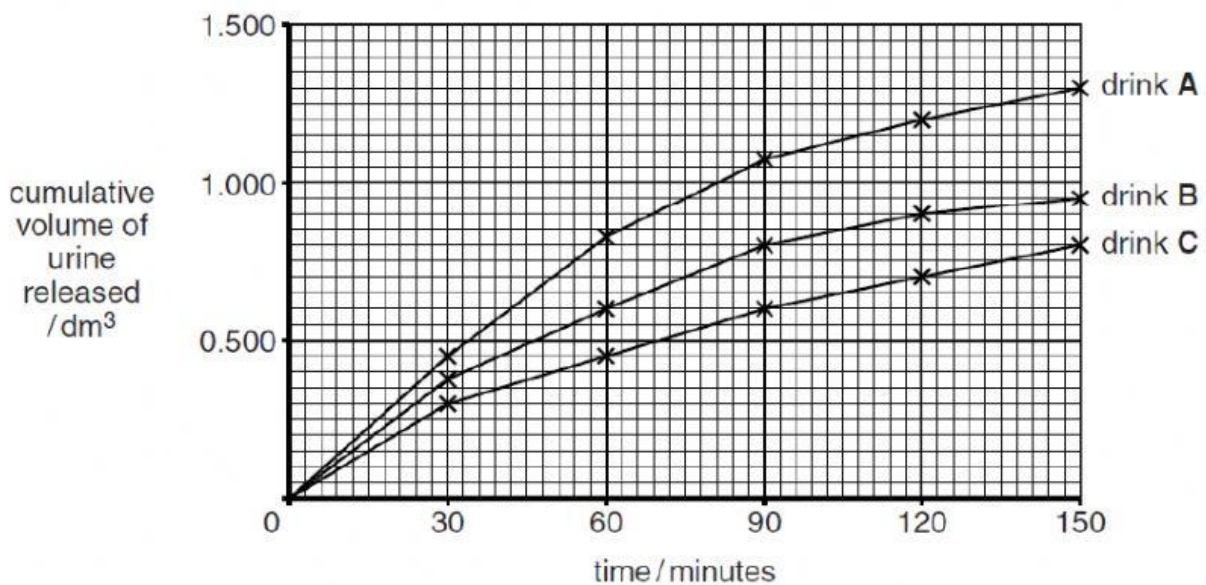


Fig. 1.1

Suggest which of the three drinks it would be better to avoid on a very hot day.

Give an explanation for your answer.

drink _____

[1]

explanation _____

[3]

[Total: 11]

3. (a) Describe the functions of the kidneys.

[June 2011, Q7]

[4]

(b) Describe and explain the ways in which a person may be kept alive even when both of their kidneys have stopped functioning.

[6]

[Total: 10]