

GCSE Biology A (Gateway)

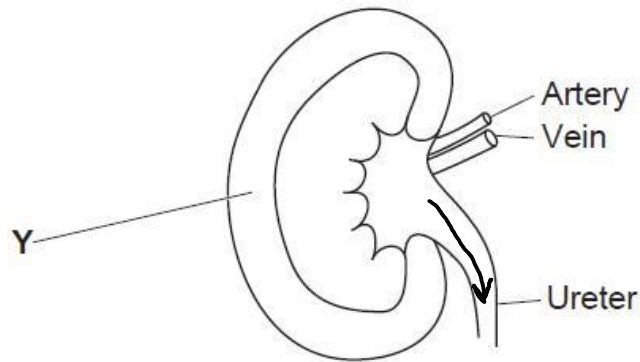
J247/01 B1-B3 and B7 Foundation (Foundation Tier)

Question Set 14

1

Look at the diagram.

It shows a vertical section through a kidney.



(a) (i) What is the name of part Y? [1]

Cortex

(ii) Which liquid flows through the ureter? [1]

Urine

(iii) Draw an arrow in the ureter showing the direction that this liquid flows. [1]

(b)

The kidney is important for water balance.

The table shows the measurements of water balance for two patients in hospital.

	Volume of water (ml)	
	Patient A	Patient B
Water taken into body in food and drinks	2500	2500
Water made in the body during respiration	200	200
Total input =	2700	2700
Water lost from kidneys in the form of urine	1900	1700
Water lost through skin, lungs and digestive system	1000	1000
Total output =	2900	2700

(i) Calculate the total output for Patient A and Patient B.

Patient A 2400

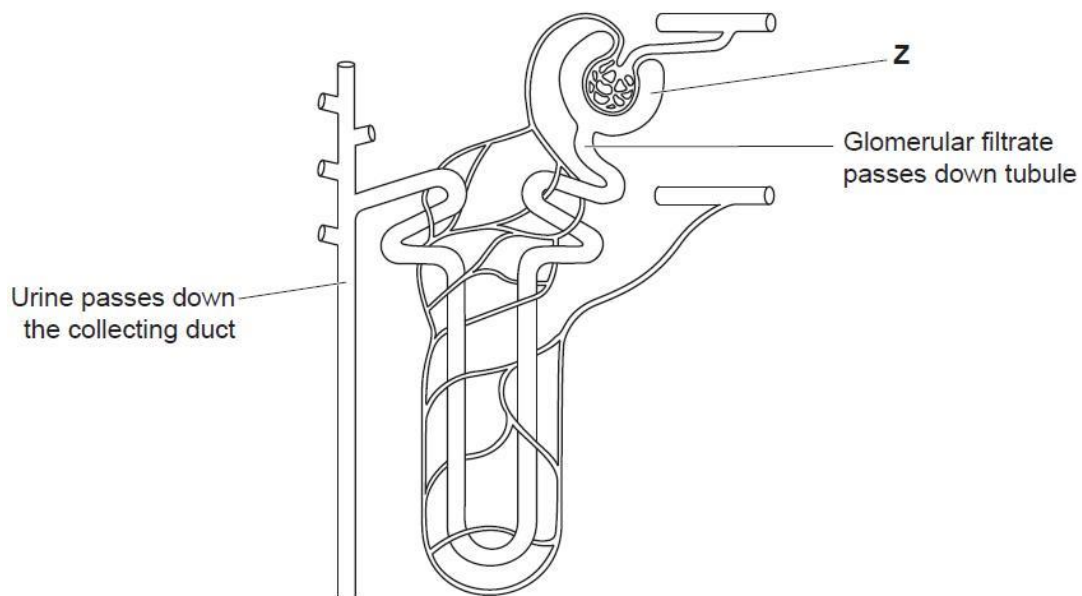
Patient B 2700 [1]

(ii) Which patient needs treatment for their kidneys?

Explain the reasons for your choice. [2]

Patient A because the total output of Patient A exceeds total input. However Patient B input matches its input. So Patient A is losing too much water.

(c) Look at the diagram. It shows a kidney tubule (nephron).

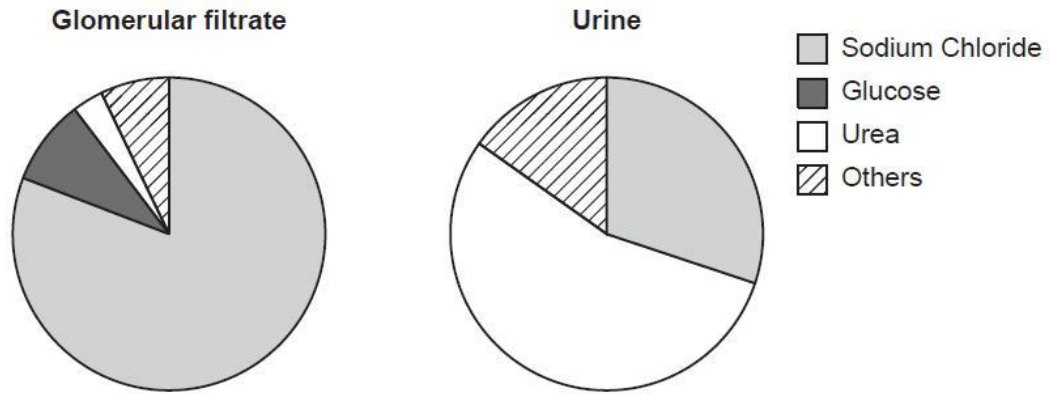


(i) What is the name of part Z?

[1]

Bowman's capsule

(ii) The diagram shows the composition of glomerular filtrate and urine.



What conclusions can be made about what happens between part Z and the collecting duct in the kidney tubule?

Use evidence from the diagram to support your answer.

[3]

Glucose is present in the filtrate but not in the urine. Levels of urea are higher in the urine than glucose so glucose needs to be reabsorbed and urea excreted in urine and removed from body.

Total Marks for Question Set 14: 10



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