

0 6 People with diabetes have difficulty controlling their blood glucose concentration.

0 6 . 1 Which part of the blood transports glucose?

[1 mark]

Tick (✓) **one** box.

Lymphocytes

Plasma

Platelets

Red blood cells

Glucose is often found in the urine of people with diabetes.

0 6 . 2 Name a chemical used to test for glucose.

[1 mark]

0 6 . 3 Describe a test that could be used to show that a person's urine contains glucose.

[2 marks]

Test _____

Positive result _____



0 6 . 4

The body cells of a person with untreated diabetes lose more water than the body cells of a person who does **not** have diabetes.

Explain how diabetes can cause the body cells to lose more water.

[3 marks]

0 6 . 5

Glucose is absorbed into the blood in the small intestine by both diffusion and active transport.

Describe how the small intestine is adapted for efficient absorption.

[5 marks]

12

Turn over ►



Question	Answers	Extra information	Mark	AO / Spec. Ref.
06.1	plasma		1	4.2.2.3 AO1
06.2	Benedict's (reagent / solution)	allow Fehling's (reagent / solution)	1	4.2.2.1 AO1
06.3	add chemical / Benedict's (reagent to urine) and boil / heat	allow ecf from question 06.2 allow any temperature above 65 °C ignore water bath unqualified	1	4.2.2.1 AO1
	positive result – (colour changes from blue to brick) red	allow orange / yellow / green / brown if no other mark awarded, allow 1 mark for reference to glucose testing stick / strip	1	
06.4	the blood is more concentrated or less dilute (than the solution in the cells)	allow the solution in the cells is less concentrated or more dilute than the blood allow correct references to water concentration or water potential or hypotonic / hypertonic ignore reference to amount of water or glucose	1	4.1.3.2 AO2
	(so) water moves out of cells by osmosis	allow (so) water moves into the blood by osmosis	1	
	water moves through a partially permeable membrane	allow semi-permeable / selectively permeable membrane	1	

Question	Answers	Extra information	Mark	AO / Spec. Ref.
06.5	projections / folds / villi provide a large surface area	ignore small intestine has a large surface area do not allow cilia	1	4.1.3.1 4.1.3.3 4.2.2.1 4.1.1.2 AO1
	walls of projections / folds / villi / capillaries are thin / one cell thick for shorter absorption / diffusion distance		1	AO2
	(small intestine is) very long, increasing time (for absorption)		1	AO1
	good / efficient blood supply to maintain concentration gradient	allow many capillaries to maintain concentration gradient	1	AO2
	cells have many mitochondria for (aerobic) respiration for active transport or cells have many mitochondria for energy release for active transport	do not accept anaerobic do not accept producing energy	1	
Total			12	