

Name..... Date.....

The test for starch theory

Apparatus and solutions *per group*

- 10% glucose solution 5 cm³ per group
- 1% starch solution 5 cm³ per group
- 1% albumen solution 5 cm³ per group
- iodine solution 5 cm³ per group
- test-tube rack and 4 test-tubes
- 4 labels
- dropping pipette (for iodine)

The students were given the following instructions, study the instructions and answer the questions given.

(a) Label four test-tubes 1-4.

(b) Put about 2 mm (*depth*) of

{	10% glucose solution into tube 1
	1% starch solution into tube 2
	1% albumen solution into tube 3
	water into tube 4

(c) To each tube, using a dropping pipette, add **three** drops of **iodine solution**. Shake the tube (*sideways*, not up and down) to mix the contents. Look for any colour changes apart from the *yellow colour of iodine* itself. Predict the results and complete the table below. (4 marks)

<i>Substance</i>	<i>Reagent's colour change after adding iodine</i>
10% glucose solution	
1% starch solution	
1% albumen solution	
water	

1 The substances selected for testing are examples of three of the principle chemical substances in cells, sugar (glucose), starch, protein (albumen). With which of these substances did iodine react to give a colour change? (1 mark)

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2 Do the results indicate that there is, for example, no sugar and no protein that will give a colour change with iodine? (1 mark)

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3 What experiments would you have to carry out in order to give a confident answer to question 2?

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4 Does the result indicate that starch will always react with iodine solution to give a colour change? (1 mark)

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5 What was the point of the water in tube 4? (1 mark)

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