

**GCSE Biology B (Twenty First Century Science)**  
**J257/04** Depth in biology (Higher Tier)

**Question Set 14**

1 Milk contains proteins and other nutrients.

(a) Milk can be tested for proteins by adding a reagent.

Draw **one** line to connect the correct **reagent** with the correct **result if proteins are present**

Reagent	Result if proteins are present
Benedict's solution	Brown-black colour
Biuret solution	Cloudy white emulsion
Ethanol	Lilac colour
Iodine solution	Red-brown precipitate

(b) Carbohydrates, lipids and proteins are all nutrients found in milk. Digestion breaks them down into smaller molecules that are absorbed into the blood.

[2]

Complete the table to identify the smaller molecules.

Large molecule	Smaller molecules it is broken down into
Carbohydrate	Sugars
Lipid	..... AND .....
Protein	.....

[2]

(c)\* Milk contains a carbohydrate called lactose. Only people with a particular mutation in their DNA can digest lactose.

If people **without** the mutation drink milk, they can suffer very unpleasant stomach pains and diarrhoea.

The mutation first appeared in a small number of people approximately 10000 years ago. It is now found in almost half the world's population.

Explain how natural selection caused the mutation to become so common.

[6]

**Total Marks for Question Set 14: 10**

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