

7.5.4 Role of biotechnology

AQA GCSE Biology (Higher) Question and answer notes

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How to use these notes

These notes cover everything you need to know for this part of the specification. They have been written in question-answer format to make them easier for you to study from.

In order to study successfully, I recommend you do the following for each question and answer:

- Read it carefully and make sure you **understand** it.
- **Memorise** the answer.
- **Practice** applying your understanding to past exam questions.

A good way to memorise information is to use **retrieval practice**. This is when you practise retrieving information from your memory. You could do this by making a flashcard for each question with the question on one side and the answer on the other. Or you could use a flashcard app. Alternatively, use a sheet of paper to cover up the answer so you can only see the question. Try to answer the question and then check how you did.

You should practise retrieving each answer from your memory until you can do it perfectly. Even once you can retrieve the answer perfectly, your ability to retrieve it will probably fade as time passes without practising. Therefore you will need to keep going back to the questions that you have previously mastered and practising them again. However, each time you re-learn the answer, the memory will be stronger and will last longer than the time before.

What is mycoprotein?

Mycoprotein is a type of food made from a fungus called *Fusarium*. It is high in protein and suitable for vegetarians.

How is mycoprotein produced?

Mycoprotein is produced by growing *Fusarium* in aerobic conditions (with oxygen). The *Fusarium* is fed glucose syrup. Once the *Fusarium* has grown, it is harvested and purified to produce mycoprotein.

How is human insulin produced for the treatment of people with diabetes?

Human insulin for the treatment of people with diabetes is produced using genetically modified bacteria. The bacteria have been genetically modified so that they produce human insulin. The bacteria are grown and then the insulin is harvested and purified.

What are two ways that genetically modified (GM) crops can be used?

Two ways that genetically modified (GM) crops can be used are:

- To provide more food
- To improve the nutritional value of food

What is an example of a GM crop with improved nutritional value?

An example of a GM crop with improved nutritional value is golden rice. Golden rice is a variety of rice that has been genetically modified so that it produces a substance that the human body can convert into vitamin A.