

21. Biotechnology and genetic modification

21.1 Biotechnology and genetic modification

Paper 1 and 2

Question Paper

Paper 1

Questions are applicable for both core and extended candidates

1 Why are bacteria used in biotechnology?

- A Bacteria reproduce rapidly.
- B Bacterial cells contain a nucleus.
- C Bacterial cells contain cytoplasm.
- D Bacterial cells do **not** produce complex molecules.

2 Bacteria are useful for manufacturing products for human use.

Which statement explains why they are useful?

- A Bacteria can be grown without nutrients.
- B Bacteria do not have a nucleus.
- C Bacteria infect human cells.
- D Bacteria reproduce very rapidly.

3 Bacteria are useful inX..... because of their rapidY..... rate and their ability to make complexZ..... .

Which row completes the sentence?

	X	Y	Z
A	bread making	competition	chemicals
B	biotechnology	reproduction	molecules
C	ethanol production	competition	enzymes
D	genetic engineering	production	pectinase

- 4 Why are bacteria useful in biotechnology and genetic engineering?
- A They can reproduce rapidly.
 - B They live in soil.
 - C They may be pathogens.
 - D They need complex nutrients.

Paper 2

Questions are applicable for both core and extended candidates unless indicated in the question

- 5 What is a characteristic of bacteria that makes them useful in genetic engineering? **(extended only)**
- A The genetic code of bacteria is different to plants and animals.
 - B Their nucleus contains DNA.
 - C Plasmids can be transferred between cells.
 - D They have large numbers of mitochondria.
- 6 Why are bacteria useful in genetic engineering? **(extended only)**
- A Their genetic code is different to other organisms.
 - B They have cell walls.
 - C They have plasmids.
 - D They reproduce sexually.
- 7 Which are reasons why bacteria are often useful in biotechnology? **(extended only)**
- 1 lack of ethical concerns over their manipulation and growth
 - 2 they have the same genetic code as all other organisms
 - 3 their DNA is located in a nucleus that can easily be altered with enzymes
- A 1 and 2 only B 1 and 3 only C 1, 2 and 3 D 2 and 3 only
- 8 Which is a reason for using bacteria in biotechnology?
- A Bacteria are found inside the human body.
 - B Bacteria do not become resistant to antibiotics.
 - C Bacteria can make complex molecules.
 - D Bacteria reproduce slowly.