

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.