

Food production: practice questions

4 questions • 12 marks • mark scheme at the back

For AQA GCSE Biology 8461 and Combined Science: Trilogy 8464. **Triple only** is not in Combined Science. **Higher tier** is only on the Higher paper.

Name

Total / 12

1 **Triple only** [2 marks]

(a) What is meant by food security? (1) (b) Give one biological factor that threatens food security. (1)

2 **Triple only** [3 marks]

Some farmers keep food animals in small pens at a controlled temperature. Explain how this increases the efficiency of food production.

3 **Triple only** [3 marks]

Explain how control of net size and fishing quotas help to conserve fish stocks.

(a) Describe how the protein-rich food mycoprotein is produced. (3) (b) Name the substance made by a genetically modified bacterium that is used to treat diabetes. (1)

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Mark scheme

One mark for each point unless a maximum is given. Words in brackets are not needed for the mark.

1. [2] Triple only

- (a) having enough food to feed a population (1)
- (b) any one from: increasing birth rate / changing diets in developed countries / new pests and pathogens / environmental change such as failure of rains / cost of agricultural inputs / conflict affecting availability of water or food (1)

2. [3] Triple only

- animals move less, so less energy is transferred to the surroundings / less glucose used in respiration for movement (1)
- warm surroundings, so less energy is used to keep warm / less heat lost (1)
- so more of the energy / biomass from food is used for growth (1)

3. [3] Triple only

- larger mesh lets small / young fish escape (1)
- they grow and breed (1)
- quotas limit the amount caught so enough fish are left to breed (1)

4. [4] Triple only

- (a) the fungus *Fusarium* is used (1)
- grown on glucose syrup (1)
- in aerobic conditions (1)
- the biomass is harvested and purified (1)
- Max 3 for (a)
- (b) human insulin (1) allow insulin