

# Exam practice questions

- 1 A population is best described as:
- A a group of organisms occupying the same habitat
  - B a group of organisms of the same species occupying the same habitat
  - C a group of organisms of the same species occupying the same ecosystem
  - D a group of organisms of the same genus occupying the same ecosystem (1)
- 2 Which of the following would promote the development of antibiotic-resistant strains of bacteria?
- A Failing to complete a course of antibiotic treatment
  - B Taking very high doses of antibiotics
  - C Treatment with more than one antibiotic
  - D Treatment with other drugs but not antibiotics (1)
- 3 a) Describe how seeds are prepared and stored by seed banks. (3)
- b) Explain the importance of seed banks in maintaining biodiversity. (3)
- 4 Three weed species appeared in a vegetable plot left as bare soil for 1 year. Individual plants were counted and the results are shown in the table.

Species	Number of individual plants
Groundsel	45
Shepherd's purse	40
Dandelion	10
Total	95

- a) Calculate the Simpson Diversity Index for this habitat. (3)
- b) Explain why using a measure such as a diversity index would be more useful than using species richness to compare the diversity of this habitat with others. (3)
- 5 a) Use the information in this chapter and Figure 8.11 to explain why the current organisation of the Kinabatangan Sanctuary will almost certainly lead to the extinction of orang-utans even though this is a protected reserve. (4)
- b) Changing the organisation of the Kinabatangan Sanctuary and conserving the orang-utan population in the future is an expensive process. Discuss the ethical and economic arguments that could be made to justify this investment. (5)
- 6 The kakapo (*Stripops habroptila*) is the world's largest parrot, weighing up to 2kg. It cannot fly but can climb trees well and walk long distances. It feeds on a variety of fruits, seeds and roots and is nocturnal. If in danger, it

## Tip

You will find the formula you require in the diversity section of this chapter. In an exam you may be required to select the right formula from a data sheet or you may be given it in the question).

will stand perfectly still for long periods. When breeding every 2–4 years it builds its nest on the ground and the males compete for ‘calling posts’ from where they emit a loud booming sound at night to attract females. Prior to the nineteenth century, kakapos were a very successful species, colonising all the islands of New Zealand, where it is thought their main predator was the (now extinct) giant eagle.



- a) Use the information provided to explain how the unique adaptations shown by the kakapo made it a successful bird species in its niche before 1800. (4)
- b) After the end of the nineteenth century, the giant eagle was extinct and New Zealand was rapidly colonised by European settlers. They brought with them domesticated cats as well as rats, and began to farm large areas of the land and hunt kakapos as an easily available source of meat. In 2012 there were only 125 birds remaining on a few isolated islands.

Explain why the changes after the nineteenth century have resulted in the near-extinction of the kakapo. (3)

- c) At the present time conservationists are making an effort to save the kakapo from extinction. All the known kakapos have been collected and released onto a small, isolated island free from predators.

What are the advantages and disadvantages of this strategy to prevent extinction? (4)

### Stretch and challenge

- 7 Humans have taken such control of their environment that they have eliminated natural selection pressures and therefore will cease evolving.

To what extent would you agree or disagree with this statement?

- 8 Areas designated National Parks in the UK are subject to strict controls but they also provide exceptional recreational opportunities in a small, highly populated island.

To what extent are the roles of National Parks in conservation of habitats and biodiversity in conflict with pressures for recreational spaces and industrial development? Does this mean that we must choose one or the other?

### Tip

Parts (a) and (b) of this question are aimed at A02, which is designed to test your ability to apply knowledge and understanding to a new situation.

The command word ‘explain’ is important here. You cannot gain credit for merely repeating information from the stem of the question. You must explain clearly how the changes named would have their effect on the population.

Part (c) is designed to test A03, which assesses your ability to use your knowledge to consider evidence or argument and come to a reasoned conclusion.

### Tip

It would be best to approach Question 8 with some research-specific examples of projects being undertaken in one or more National Parks with a view to managing this conflict. Use your research evidence to come to some conclusion.