

Distribution of Organisms

14. Which line in the table below identifies abiotic and biotic factors?

	<i>Abiotic factor</i>	<i>Biotic factor</i>
A	light intensity	pH
B	temperature	predation
C	grazing	light intensity
D	predation	grazing

19. Students used a quadrat to estimate the number of buttercups in a field.

They threw the quadrat randomly three times in the area.

In order to improve the reliability of their results they could have

- A asked another group of students to check that they had counted correctly
- B thrown the quadrat ten times instead of three
- C only thrown the quadrat when conditions were at an optimum
- D used a smaller quadrat for each of their samples.

11. During a woodland survey, a group of students measured some abiotic factors. Readings they took included the temperature of the soil and the air.

- (a) Name one abiotic factor, other than temperature, which they could have measured in the woodland and describe the method of measuring this factor.

2

Abiotic factor _____

Method _____

- (b) (i) During the survey, the students sampled the leaf litter in the woodland using pitfall traps.

However, when they checked the pitfall traps four days after setting them up, the students discovered that they were all empty.

Describe an error the students might have made which would explain why there were no invertebrates in the traps.

1

15. Which of the following describes interspecific competition?

- A Individuals of different species requiring different resources.
- B Individuals of different species requiring similar resources.
- C Individuals of the same species requiring different resources.
- D Individuals of the same species requiring similar resources.

19. Indicator species can provide information about

- A numbers of organisms in a lake
- B numbers of predators in a woodland
- C levels of light in an ecosystem
- D levels of pollution in a river.

14. An example of a biotic factor affecting a population of plants is

- A a leaf disease reducing the growth of lettuce plants
- B acidic soil preventing the growth of daisies
- C shade from buildings causing a decrease in the growth of grass
- D a cold winter causing a decrease in the growth of geranium plants.

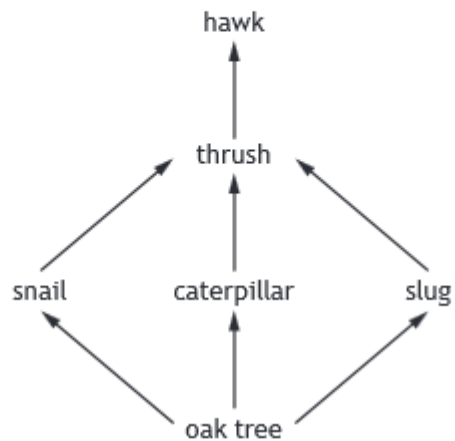
15. Which of the following statements is true of predation?

- A It is an abiotic factor and causes a decrease in prey numbers.
- B It is an abiotic factor and causes an increase in prey numbers.
- C It is a biotic factor and causes a decrease in prey numbers.
- D It is a biotic factor and causes an increase in prey numbers.

19. Which row in the table describes a type of competition and a matching example?

	<i>Type of competition</i>	<i>Example</i>
A	Interspecific	Two birch trees growing close together in a wood
B	Interspecific	Lions and hyenas feeding on zebra
C	Intraspecific	Seals and dolphins feeding on small fish
D	Intraspecific	Buttercups and daisies growing in the same field

19. The diagram shows part of a food web.



A chemical was used to control the number of slugs.

Which of the following could be a result of a large decrease in slug numbers?

- A An increase in snails.
- B An increase in hawks.
- C A decrease in caterpillars.
- D A decrease in oak trees.

25. Which row in the table identifies biotic and abiotic factors which can affect a population?

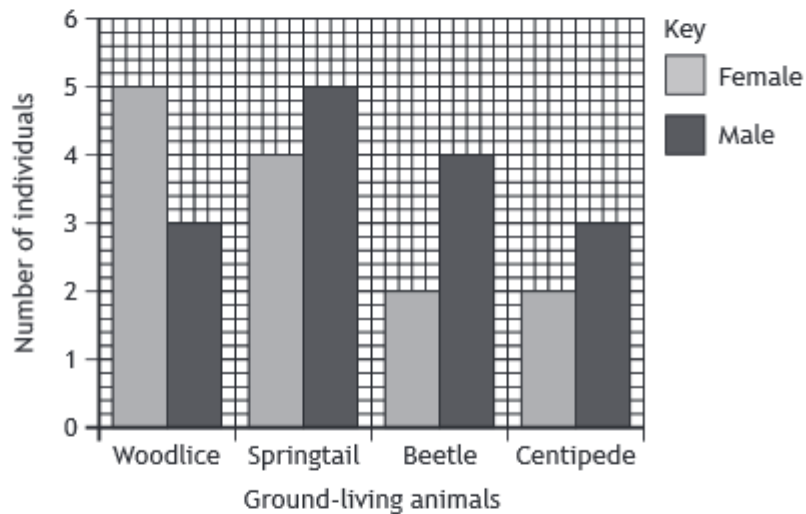
	<i>Biotic factors</i>	<i>Abiotic factors</i>
A	grazing and predation	pH and temperature
B	predation and temperature	pH and grazing
C	pH and temperature	grazing and predation
D	pH and grazing	predation and temperature

14. Sampling techniques can be used to estimate the abundance of plants and animals.

(a) In an investigation into ground-living animals in a woodland, a group of students collected and counted the animals they found.

(i) Name a sampling technique which could be used to collect the ground-living animals. 1

(ii) The students sorted the animals into male and female, counted them and recorded the results in a bar graph.



1 Identify the animal which had the greatest overall abundance. 1

2 The students concluded that males were always more abundant than females.

Identify the animal for which this is not true. 1

(iii) It was decided that the samples were not fully representative of the area.

Suggest how the investigation could be improved. 1
