S2 Biology Ecosystems TEST PRACTICE QUESTIONS

**DO NOT WRITE ON THESE SHEETS**

booklet number

1. The diagram shows part of a food web in an ecosystem

a) What do the arrows represent?

b) Which organisms are the producers?

c) Name two animals that are not eaten by other animals?

d) From the food web write out a complete food chain that has four organisms including toads.

2 The grid contains some terms related to Ecosystems

a) Which letter represents an example of a biotic factor?

b) Which letter represents all the organisms living in a particular area?

c) Which letter represents the place where a plant species lives?



3. The diagram right shows the feeding relationships between some organisms in a woodland ecosystem.

a) What Name is given to this type of diagram?

b) What form of energy do the producers use to make food?

c) Name an omnivore shown in the diagram.

d) State what is meant by the term consumer.

4. The leaf litter in the woodland was sampled and the table right shows the number and types of invertebrate found. Use the information in the table to complete a pie cart.

*[Pie charts available from your teacher]*

5. Part of a food web from the shore is shown below

The numbers of mussels and periwinkles may be affected if the **barnacles** were removed from the food web.

a) Predict what would happen to the mussel population if the barnacles were removed & explain your answer

bi) Predict what would happen to the periwinkle population if the barnacles were removed & explain your answer

6. The diagram shows part of a food web from a forest.



a) If all the chaffinches were removed from the food web what happen to the dormouse population? Give a reason for your answer.

b ) Draw a food chain from the food web that is made up of 4 organisms.

7. Three groups of students used quadrats to carry out a survey on the distribution of mussels on different areas of a shore.

Each quadrat measured 50cm X 50cm (0.5m x 0.5m) i.e. 4 quadrats per 1m2

The positions of the quadrats and the number of mussels found are shown below for each group.

a) Copy and complete this results table

|  |  |  |
| --- | --- | --- |
| group  | average number of mussels per quadrat | estimated number of mussels per m2 |
| A | 11 | 44 |
| B |  | 64 |
| C |  |  |

b) i) Which group has made an error in their sampling technique which makes their results less reliable than the other groups?

ii) State the error this group have made and describe an improvement which would increase the reliability of their results.

c) The area of shore sampled by group B was 120m2. Use their results to calculate the estimated total number of mussels.

8. A comparison was made between the types of invertebrate animals living on the branches and leaves on an oak tree with those living on a beech tree. Samples were collected as shown right.

a) Give two variables which should be kept constant to make the comparison valid when using this technique.

b) The samples collected were not representative of all the invertebrates living in the trees. Suggest a reason for this.

c) Measurement of abiotic factors such as light intensity may be recorded at the same time as sampling -

i) name an abiotic factor ii) name the equipment used to measure it iii) identify a possible source of error when using this equipment iv) describe how to minimise this source of error

9. An investigation was carried out into the effect of light intensity on the distribution of a plant species. At eight different measurement points in a garden the average light intensity was measured and the percentage ground cover recorded. The results are shown below.



a) What is the light intensity in the garden where the ground cover of the plant was 100%?

b) What was the percentage ground cover of the plant when the light intensity was 750lux?

c) What is the relationship between light intensity and percentage ground cover of the plant?

10. Name the biomes X, Y, Z in the following table.

|  |  |  |  |
| --- | --- | --- | --- |
| biome | rainfall | temperature | animals / plants found there |
| X | low | high | lizards / cactus |
| Y | low | low | bear / small shrubs |
| Z | high | high | rubber trees / monkey |

11.

a) Define the term ADAPTATION.

b) Give an **example** of a plant OR animal **state** **two adaptations** it has and **describe** how the adaptations help it to survive.

12. The table below shows some of the characteristics of six ladybird species which live in this country.





B

D

C

A

a) Use the information provide the missing information on the key at points A, B, C & D.

b) Which species of ladybird can be less than 4mm in length?

c) A student found a ladybird with a red wing case and a body length of 7mm. What specific feature of its appearance allowed it to be identified as an “Eyed ladybird”?

13. Some features of five varieties of daffodils are shown in the table below.





C

D

B

A

a) Use the information provide the missing information on the key at points A, B, C & D.

b) Give three features of American Dream daffodils.

c) Describe one difference between Ice Follies and Barrett Browning daffodils.

14. The diagrams below show the invertebrates collected by pupils.

They are not drawn to scale.



a) Give the missing information at points A, B, C & D



A

B

D

C

b) Give two features of the beetle mentioned in the key.

***End of Questions***