Candidate Name	Centre Number	Candidate Number

WELSH JOINT EDUCATION COMMITTEE

ENTRY LEVEL CERTIFICATE

CYD-BWYLLGOR ADDYSG CYMRU

TYSTYSGRIF LEFEL MYNEDIAD

715/01

Entry Level Certificate

LAND STUDIES

P.M. FRIDAY, 24 March 2006

(1 Hour)

Examiner only

TOTAL MARK	

INSTRUCTIONS TO CANDIDATES

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided in this booklet.

If you have difficulty in reading a question, put up your hand and the teacher-in-charge will read it to you.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets at the end of each question or part-question.

No certificate will be awarded to a candidate detected in any unfair practice during the examination.

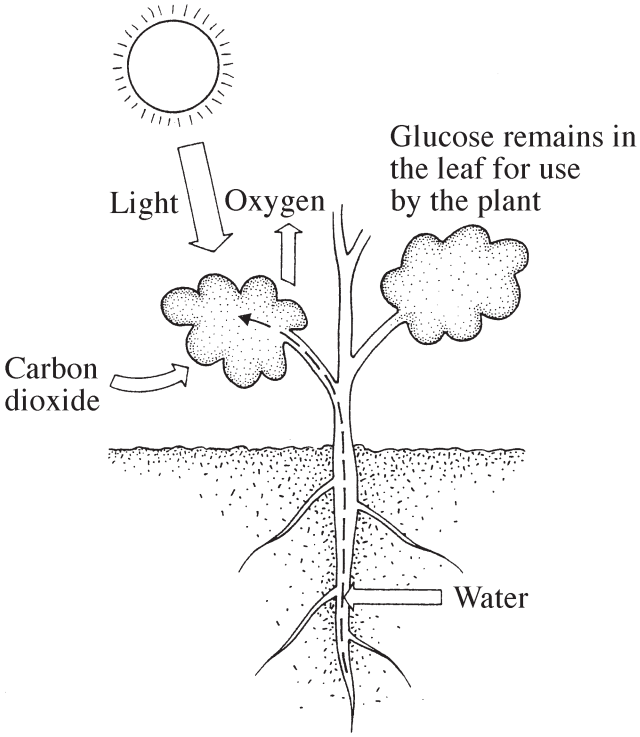
Answer **all** *questions*.

1. Read the following paragraphs carefully and then answer the questions. [11]

The reaction between plants, light, water and carbon dioxide is called *photosynthesis*. This is the way in which plants make food. The plant uses *light* to join *water* and *carbon dioxide* together to make a sugar called *glucose*. This is then turned into *starch*. As well as glucose, a gas called *oxygen* is made. Animals and plants use oxygen for respiration.

Photosynthesis takes place in the *leaf* of the plant. The leaf cells contain tiny green discs called *chloroplasts*. These contain the substance called *chlorophyll*. It is the chloroplasts which trap the light energy that is needed for photosynthesis.

So, for photosynthesis to take place the plant needs water, carbon dioxide, light and chlorophyll. Glucose and Oxygen are made.



A summary of photosynthesis

(a) What do we call the reaction between plants, light, water and carbon dioxide? [1]

.....

(b) What does the plant use light for? [1]

.....

.....

(c) What **two** (2) things are made by this process? [2]

(i) ..... (ii) .....

(d) What can animals and plants use oxygen for? [1]

.....

.....

(e) Where, in the plant, does photosynthesis take place? [1]

.....

.....

(f) What are the tiny green discs in the leaf cells called? [1]

.....

(g) What chemical is found in these tiny green discs? [1]

.....

(h) Name **three** (3) things, in addition to light, which are needed for photosynthesis to take place. [3]

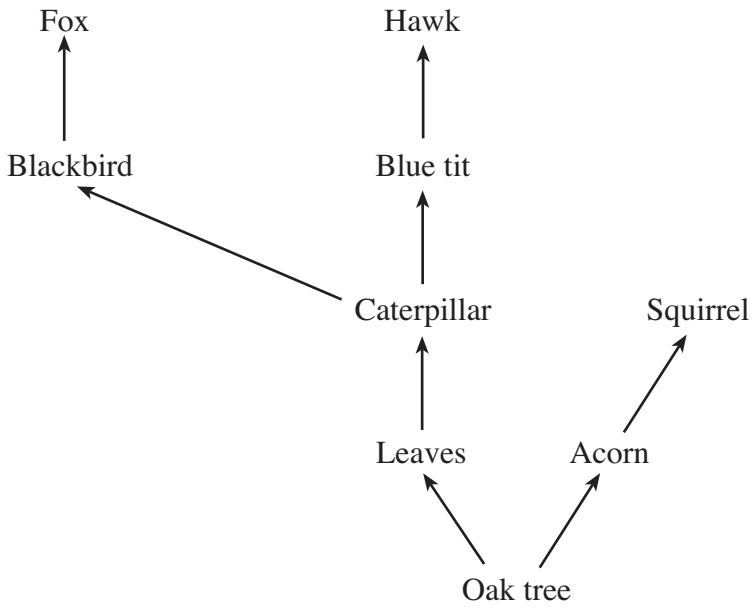
(i) ..... (ii) .....

(iii) .....

[Total: 11]

Turn over.

2. When animals eat plants, the food energy from the plant is used by the plant eaters (the herbivores). This energy is passed on to the carnivores which eat the plant eaters.
Study the food web below and answer the questions. [5]



(a) Name the tree which supplies food for the animals. [1]

.....

(b) How many animals depend on the Oak tree for food? [1]

.....

(c) Name **two** (2) *herbivores* from the food web above. [1]

(i) ..... (ii) .....

(d) Name **two** (2) *carnivores* from the food web above. [1]

(i) ..... (ii) .....

(e) Write out a food chain with **three** (3) animals in the chain. [1]

Oak tree ..... → ..... → .....

[Total: 5]

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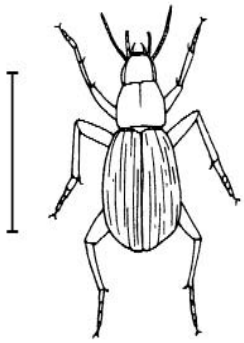
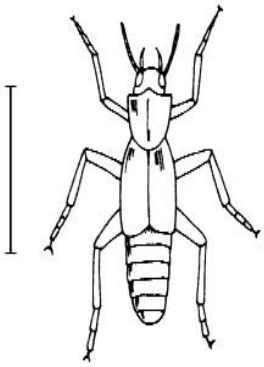
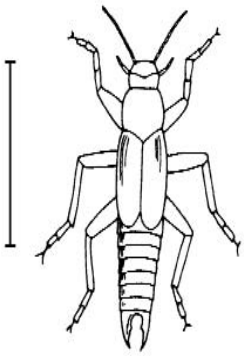
3. Here are some pictures of animals found in leaf litter (dead leaves). Use the key on the opposite page to name these animals. Write their names underneath **each** picture. (The animals are not drawn to scale.) [5]



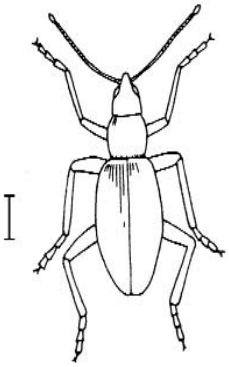
A. .....



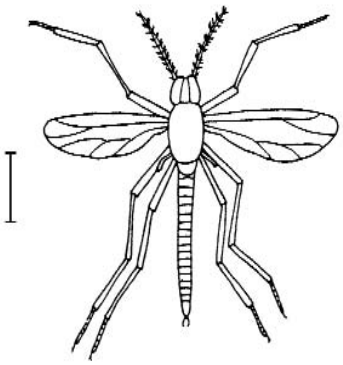
B. .....



C. .....



D. .....



E. .....

[Total: 5]

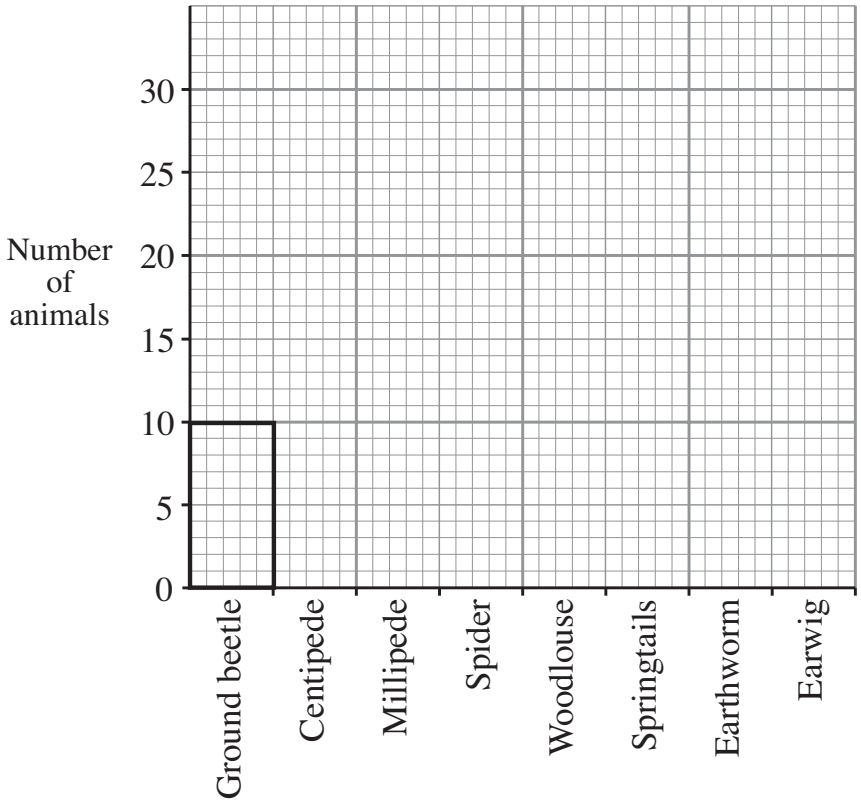
KEY

1.	The animal has wings	**Midge**
	The animal does not have wings	**Go to 2**
2.	The abdomen (the bottom part of the body) has segments	**Go to 3**
	The abdomen (the bottom of the body) does not have segments	**Go to 4**
3.	The abdomen has pincers at the end	**Earwig**
	The abdomen does not have pincers on the end	**Rove Beetle**
4.	Short antennae	**Ground Beetle**
	Long antennae	**Weevil**

4. A class of pupils collected animals from the leaf litter and counted the different types. Here is a table of their results: [10]

Animals	Number
Ground beetle	10
Centipede	15
Millipede	15
Spider	20
Woodlouse	30
Springtails	5
Earthworm	10
Earwig	5

(a) Make a **bar** graph of their results on the graph paper. The first one has been done for you. [9]



(b) What was the **total** number of animals found? [1]

.....

[Total: 10]

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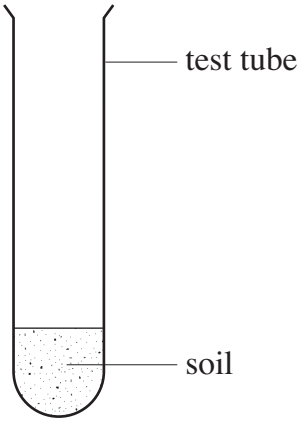
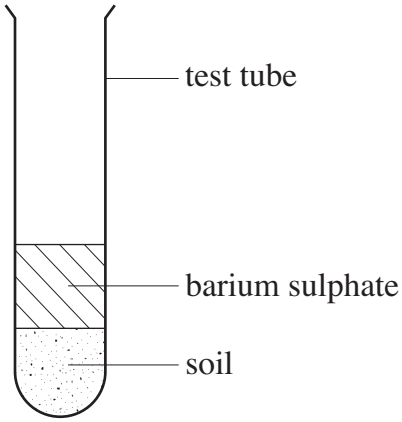
5. The pupils wanted to find out the pH of the soil beneath the leaf litter. They tested the soil like this: [7]

Step 1



1. Put 1cm of soil in a test tube.

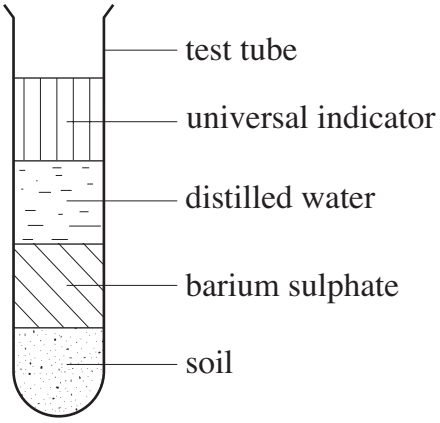
Step 2



2. .....

.....

Step 3



3. Add distilled water and universal indicator.

Step 4 - Shake and leave to settle.

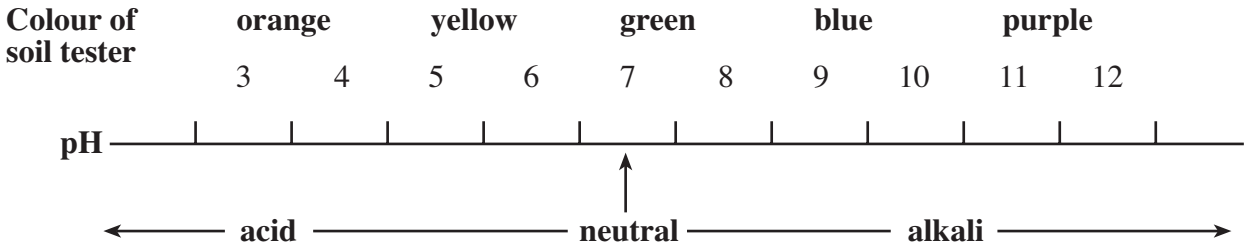
(a) A pupil forgot to write the instructions for **Step 2**.

Write them in for him next to the diagram. [1]

(b) In **Step 3**, what 2 (two) extra things were added to the test tube? [2]

(i) ..... (ii) .....

The universal indicator changes colour to show the pH values of the soil according to the pH scale.



(c) The soil sample solutions turned orange / yellow.

What was the pH value of the soil? [1]

.....

(d) What colour would a neutral soil give? [1]

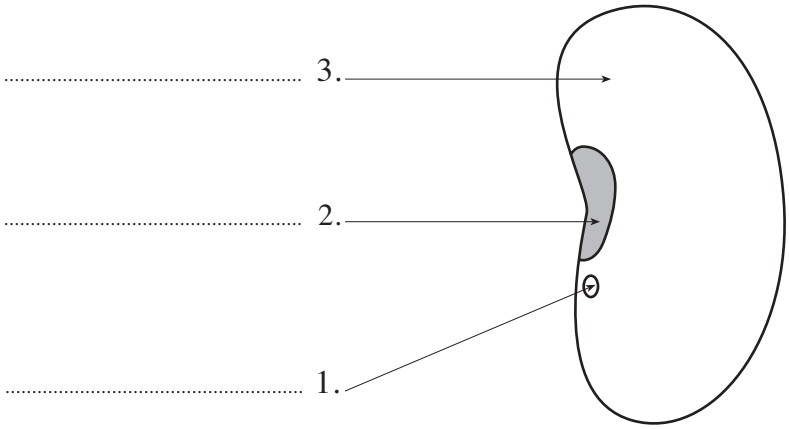
.....

(e) A soil with a pH value of 3 (three) is an ..... soil. [1]

(f) A soil with a pH value of 9 (nine) is an ..... soil. [1]

[Total: 7]

6. Here is a drawing of a broad bean seed. It has a coat called the *testa*, a scar called the *hilum*, and a hole to let in water, called the *micropyle*. Answer the questions about the broad bean seed. [13]



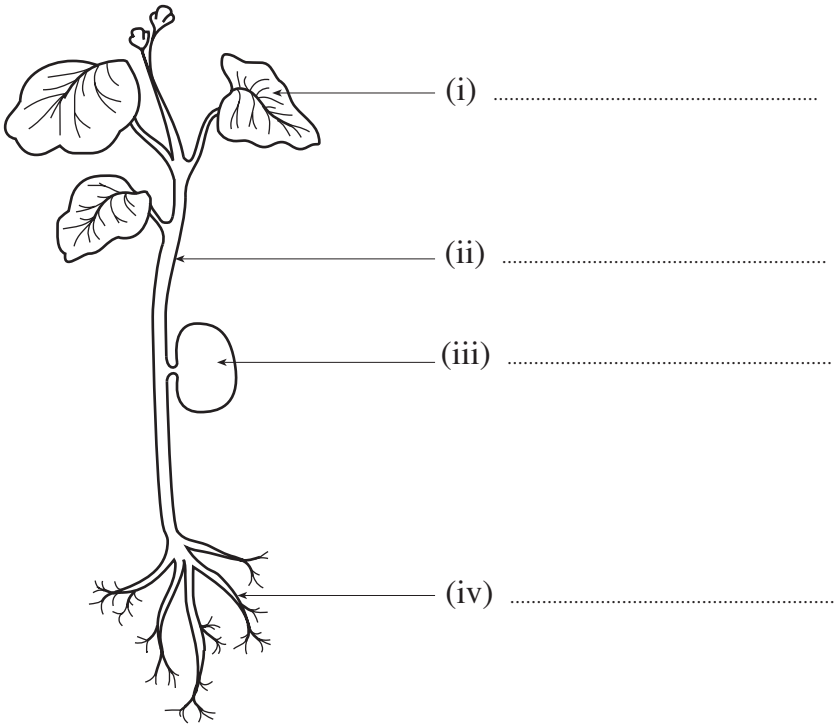
(a) Label parts 1, 2 and 3 on the diagram. [3]

(b) Circle the best temperature for this seed to germinate (grow). [1]

(i) 5°C (ii) 15°C (iii) 45°C (iv) 65°C

(c) The seed starts to germinate. On the diagram, label the following parts: [4]

leaf; stem; root; seed.



(d) To grow well, name **three** (3) conditions that the plant needs. [3]

(i) .....

(ii) .....

(iii) .....

(e) 100 (one hundred) seeds were sown, but only 80 (eighty) germinated.

What was the % (percentage) germination? [2]

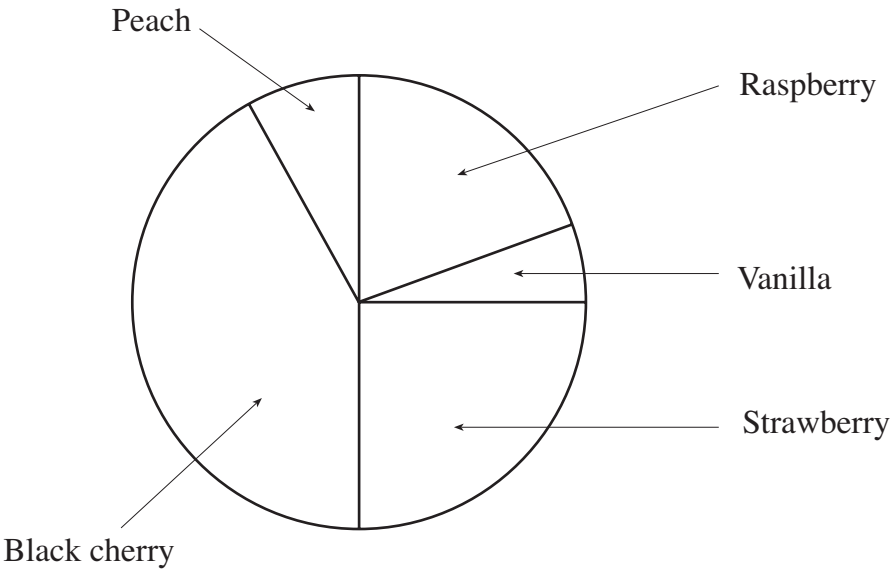
.....

[Total: 13]

Turn over.

7. A class of pupils carried out a survey to find out the most popular flavour of yoghurt. They recorded their results in a pie chart.

Answer the questions about their results. [5]



(a) Which flavour was the **most** popular? [1]

.....

(b) Which flavour was the **least** popular? [1]

.....

(c) Answer **True** or **False:** [3]

(i) Raspberry is more popular than Strawberry. .....

(ii) Black Cherry is more popular than Strawberry. .....

(iii) Raspberry and Strawberry together scored more than Peach and Vanilla together.

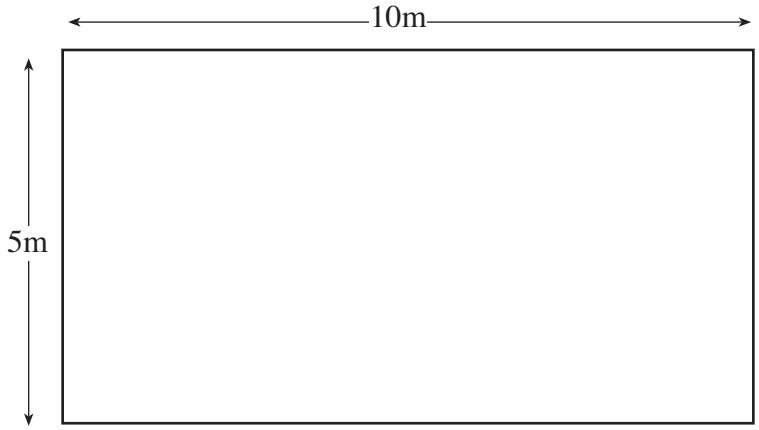
.....

.

[Total: 5]

8. A family decided to make a lawn at the front of their house.

Here is a plan. (not drawn to scale) [7]



(a) What is the area of the lawn? [2]

.....

(b) The family needed 1 (one) 500g box of grass seed for every 10 square metres.

How many boxes of seed will they need altogether? [1]

.....

(c) Each box of seed costs £2.00. How much will the grass seed cost? [1]

.....

(d) The family could use turf instead of grass seed for the lawn. A roll of turf is 1 (one) square metre.

How many rolls of turf will they need? [1]

.....

(e) Each roll of turf costs £2.00. How much will it cost to turf the lawn? [1]

.....

(f) Which is the cheaper method, grass seed or turf for the family garden? [1]

.....

[Total: 7]

Turn over.

9. Look at the words in **List A** and find the meaning in **List B**.
Join **each** word with its meaning using a straight line. [5]

List A	**List B**
Bacteria	an insect pest of plants.
Greenfly	an animal which eats plants and other animals.
Omnivore	tiny organisms which can break down dead material.
Producer	decayed material in the soil.
Humus	a green plant which makes food.

[Total: 5]

10. Use the following words to fill in the spaces so that the paragraph below makes sense. [8]

crops	**trees**	**oxygen**	**leaves**
food	**rain**	**Earth**	**eat**

Green plants are important to all life on ..... . During photosynthesis plants make ..... for animals to ..... and also produce ..... for respiration. Plants also lose water from their ..... . Large plants such as ..... lose a lot of water. This forms clouds which can bring ..... to places miles away so that people can grow ..... .

[Total: 8]

11. Are the following questions **true** or **false**? Write **true** or **false** next to **each** statement.

(a) A clay soil is made up of large particles. ..... [1]

(b) Earthworms are harmful to plants. ..... [1]

(c) Carnivores are animals which eat other animals. ..... [1]

(d) Ladybirds eat aphids (greenfly). ..... [1]

[Total: 4]