

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
GCSE
B683/01
ENVIRONMENTAL AND LAND-BASED
SCIENCE
Commercial Horticulture, Agriculture
and Livestock Husbandry
(Foundation Tier)

TUESDAY 18 JUNE 2013: Morning
DURATION: 1 hour
plus your additional time allowance
MODIFIED ENLARGED

Candidate forename		Candidate surname	
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Centre number						Candidate number				
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Candidates answer on the Question Paper.
A calculator may be used for this paper.

OCR SUPPLIED MATERIALS:

None

OTHER MATERIALS REQUIRED:


Pencil
Ruler (cm/mm)

READ INSTRUCTIONS OVERLEAF

INSTRUCTIONS TO CANDIDATES

- Write your name, centre number and candidate number in the boxes on the first page. Please write clearly and in capital letters.
- Use black ink. HB pencil may be used for graphs and diagrams only.
- Answer ALL the questions.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).

INFORMATION FOR CANDIDATES

- Your quality of written communication is assessed in questions marked with a pencil ().
- The number of marks is given in brackets [] at the end of each question or part question.
- The total number of marks for this paper is 50.
- Any blank pages are indicated.

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Answer ALL the questions.

- 1 The photographs show four flowering shrubs used in parks and gardens.**



Write the name of each shrub in the box under the correct photograph.

Choose from this list.

BUDDLEIA

CHERRY

FORSYTHIA

HYDRANGEA

[3]

[TOTAL: 3]

2 Horticultural fleece is often put over areas where plants are growing.

Which one of the following is NOT a use for horticultural fleece?

- A keeping pests off the crop**
- B preventing weed growth**
- C protecting tender plants from frost**
- D warming the soil**

Answer A, B, C or D _____ [1]

[TOTAL: 1]

3 The photograph shows a flock of upland sheep.

These sheep are kept on the hills in the Lake District.



Which one of the following characteristics of upland sheep is the most important for the sheep farmer?

- A conformation**
- B disease resistance**
- C fine fleece**
- D hardiness**

Answer A, B, C or D _____ [1]

[TOTAL: 1]

4 Some farmers keep Alpacas for their wool.



The farmer weighs the animals to check on their growth.

Explain the stages in weighing this animal safely.



The quality of written communication will be assessed.

[6]

[TOTAL: 6]

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5 Sheep are one example of a ruminant animal.

The structure of the digestive system of a ruminant differs from that of a non-ruminant.

Select THREE structures from the list that are found ONLY in a ruminant.

ABDOMEN

ABOMASUM

CAECUM

DUODENUM

ILEUM

RECTUM

RETICULUM

RUMEN

1 _____

2 _____

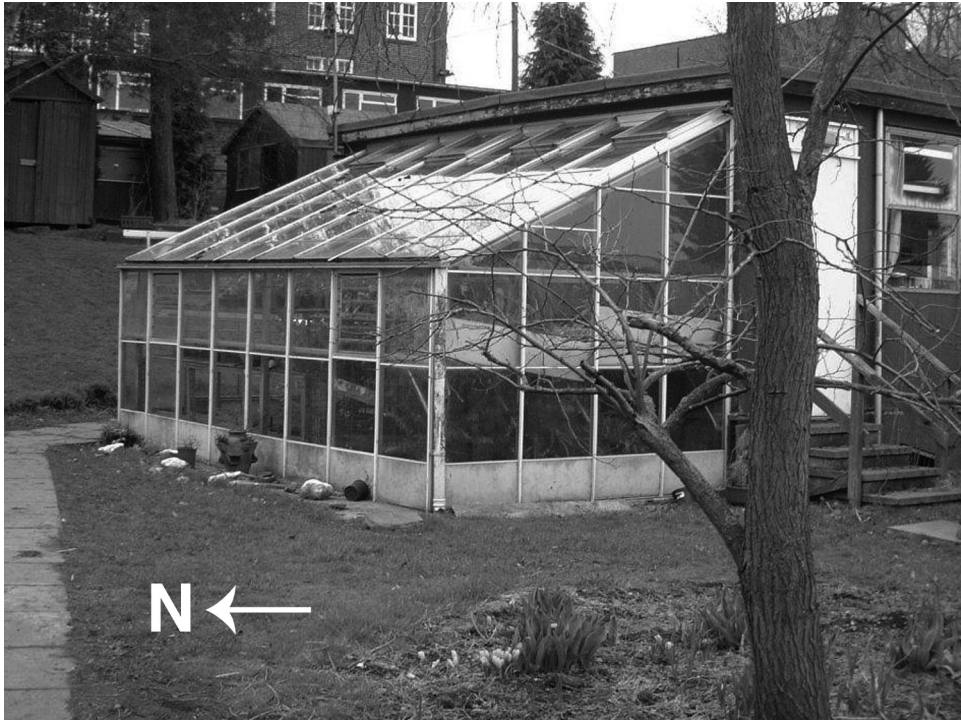
3 _____

[3]

[TOTAL: 3]

6 The photograph shows a lean-to glasshouse in the grounds of a school.

The glasshouse is facing north.



Explain the advantages and disadvantages of where this glasshouse is sited.



The quality of written communication will be assessed.

[6]

[TOTAL: 6]

7 Fertilisation in a mammal takes place in a number of stages.

Some of these stages are listed below.

Put these stages in the correct order.

CHROMOSOMES COMBINE

EGG RELEASED

SPERM ENTERS EGG

SPERM SWIMS TO EGG

1st	<input type="text"/>
2nd	<input type="text"/>
3rd	<input type="text"/>
4th	<input type="text"/>

[2]

[TOTAL: 2]

8 An animal is out of condition.

It is ANAEMIC and has poor BONE DEVELOPMENT.

Here are four dietary supplements.

SUPER GROW

Contains -

calcium

magnesium

phosphorus

potassium

BOOST

Contains -

copper

iron

magnesium

phosphorus

NUTRIENT PLUS

Contains -

copper

iodine

phosphorus

zinc

MINERAL

MAGIC

Contains -

calcium

iron

magnesium

phosphorus

In order to treat this animal, which of these would be a suitable dietary supplement?

Suitable supplement _____

Explain your choice.

_____ **[2]**

[TOTAL: 2]

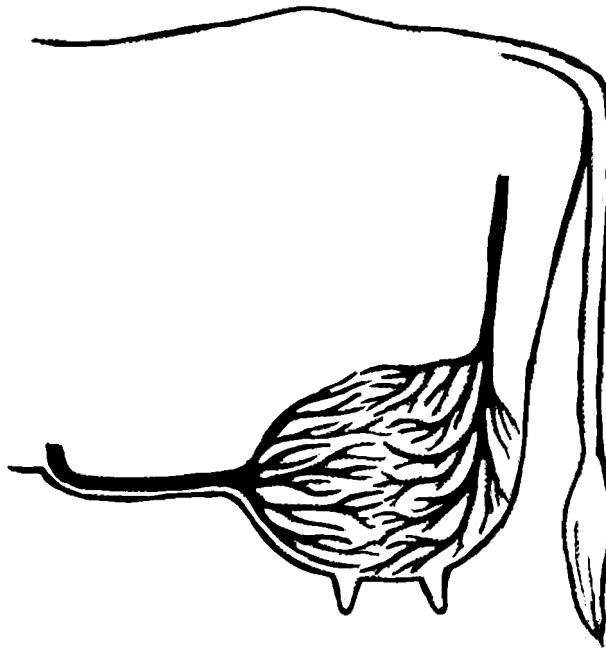
9 Pests of crops can be controlled by biological and non-biological methods.

Explain the difference between biological and non-biological pest control.

[2]

[TOTAL: 2]

10 The diagram shows the milk-producing organs of a cow.



Which one of the following is NOT part of the milk-producing organs of a cow?

- A milk vein**
- B pancreas**
- C teat**
- D udder**

Answer A, B, C or D _____ [1]

[TOTAL: 1]

11 Sam grows tomatoes in soil in a glasshouse each year.



After several years, Sam finds that the tomato crop is not as good or as healthy.

Suggest reasons why the tomato crop is not as good or as healthy.

[2]

[TOTAL: 2]

12 Peat is used in the horticultural industry in the UK.

About 3 million cubic metres of peat are used each year.

Most of this peat comes from the wetlands of Ireland.



Gardeners use peat as a soil improver and as a growing medium.

Suggest two other ways GARDENERS can use peat.

1 _____

2 _____

[2]

[TOTAL: 2]

13 Peat and peat alternatives are used by different groups of people.

The charts on the page opposite show these different groups.

(a) Which group uses most peat?

_____ [1]

(b) What percentage of peat alternatives are used by local authorities?

Answer _____ % [1]

(c) The government wants to run a campaign to reduce the use of peat.

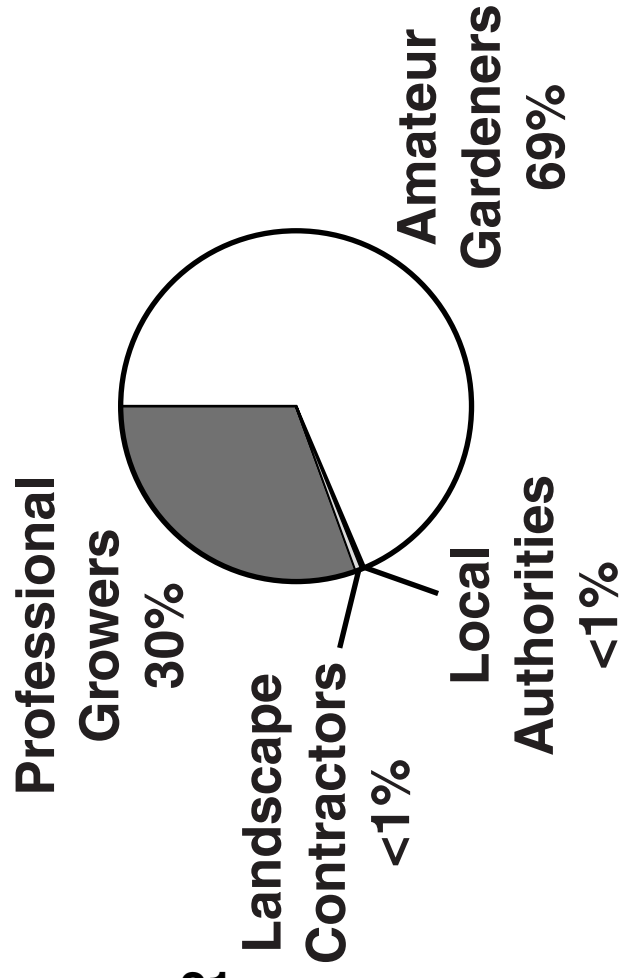
Use the charts to suggest which group of people the government would be best to target in this campaign.

Explain your answer.

_____ [2]

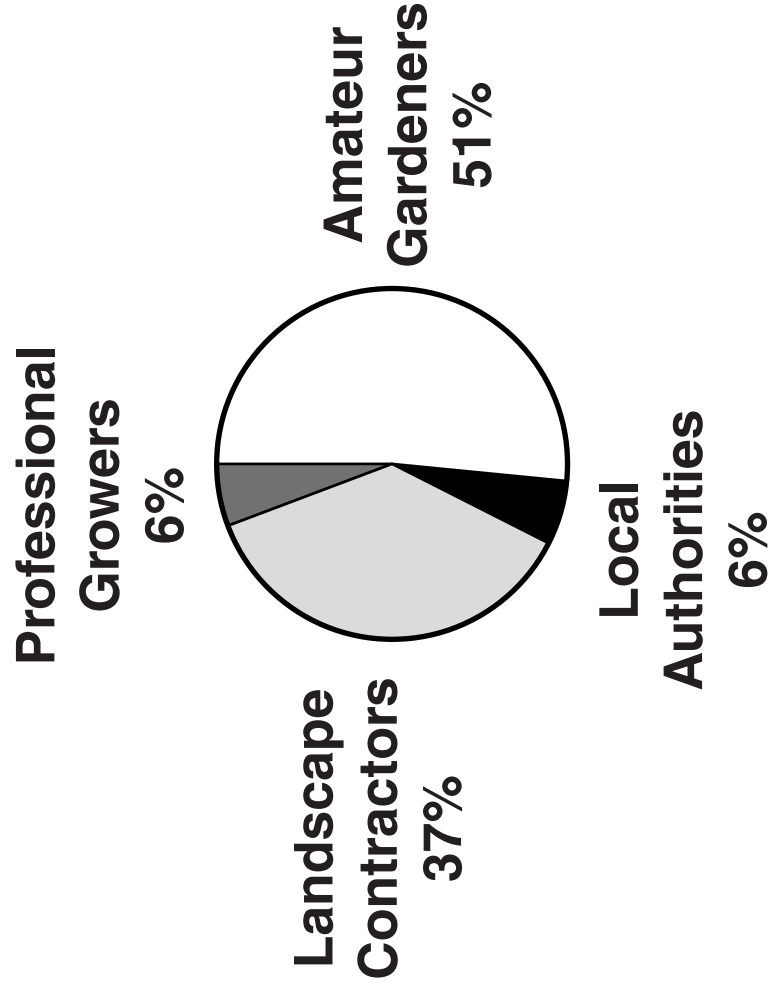
[TOTAL: 4]

PEAT



21

PEAT ALTERNATIVES



- 14 The graph on the page opposite shows how the percentage of peat used by each group of people fell between 1999 and 2007.**

Use the graph to answer the following questions.

- (a) In which group did the amount of peat used between 1999 and 2007 go down the most?**

_____ **[1]**

- (b) What happened to the percentage of peat used by the LOCAL AUTHORITY over the same period?**

_____ **[1]**

[TOTAL: 2]

Key

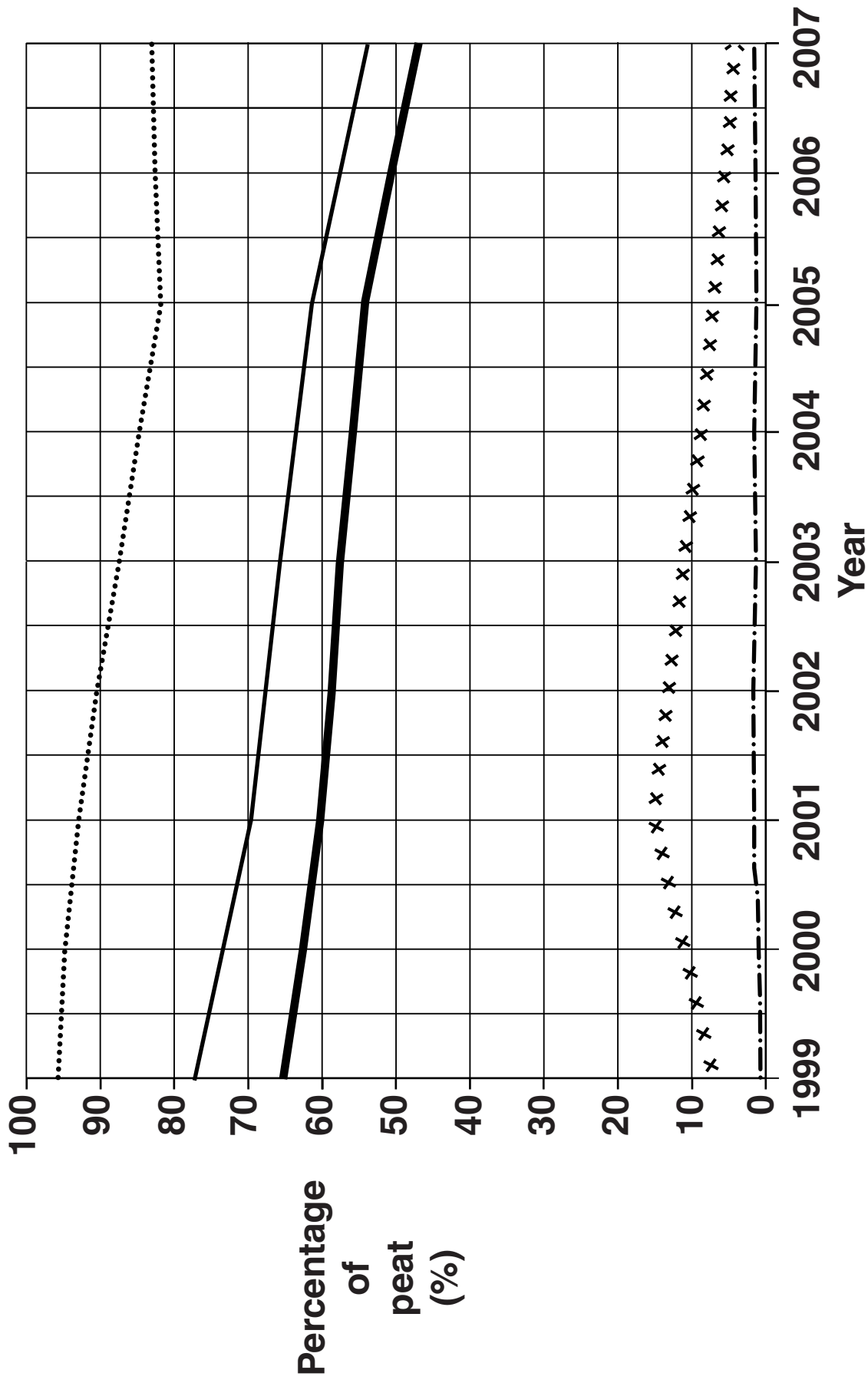
— Amateur Gardeners

x x x x Local Authority

· · · · · Landscaping

· · · · · Professional Growers

— Total Market



15 The table shows the uses of peat and peat alternatives in 2007.

	Soil improver in thousand m³	Growing medium in thousand m³	Total in thousand m³
Peat	49.4	2 962.9	3 012.3
Peat alternatives	2 523.1	1 073.0	3 596.1
Total		4 035.9	6 608.4
% Peat	1.9	73.4	

Look at the table.

There are two missing figures.

(a) Calculate the missing figures and write them in the table. [2]

(b) Compare the uses of peat and peat alternatives in 2007.

_____ **[2]**

[TOTAL: 4]

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16 The chart on the page opposite shows how the numbers of poultry in the UK have changed since 2004.

(a) Describe the changes in UK poultry numbers from 2004 to 2012.

[2]

(b) The table compares three different egg production systems.

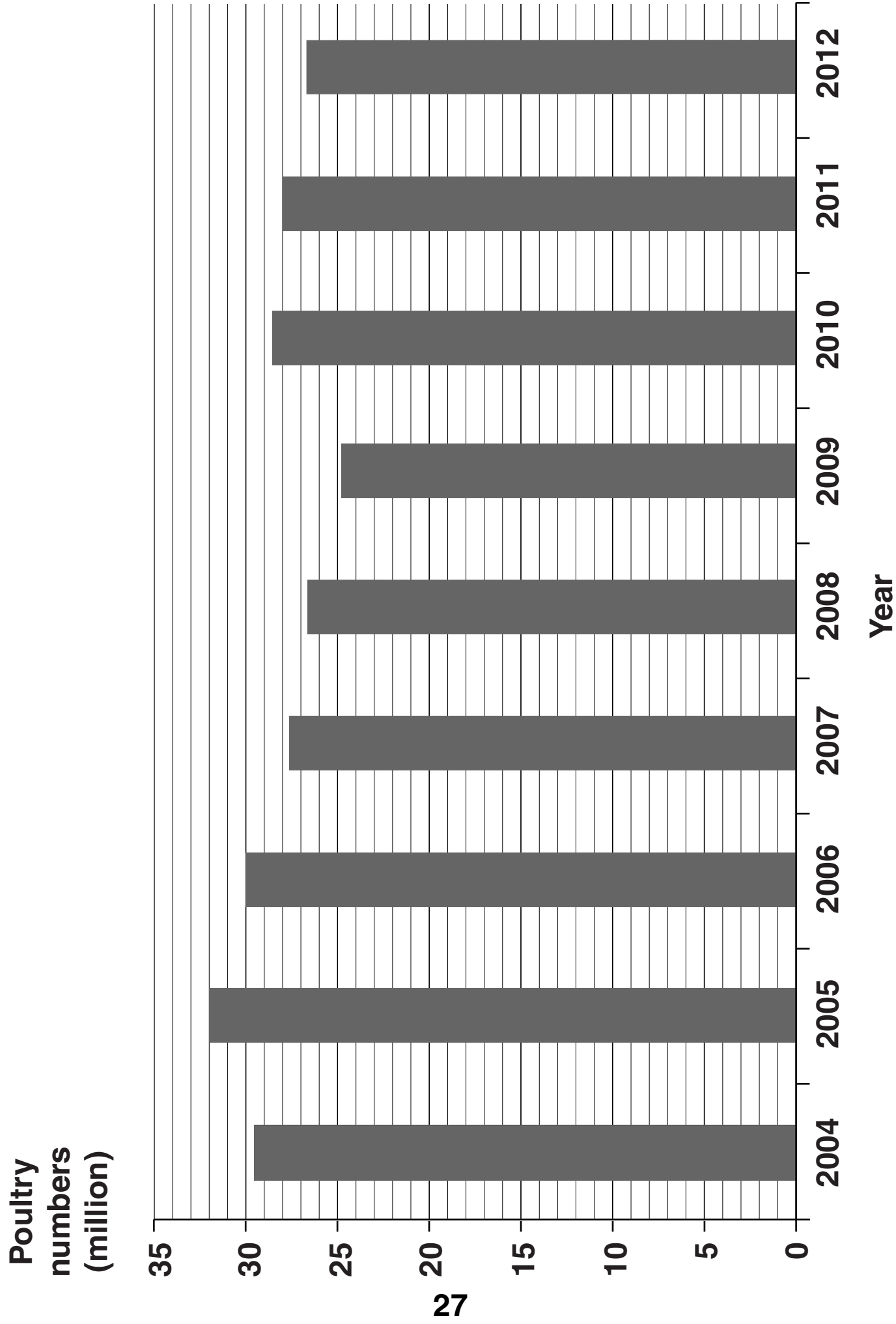
Type of system	Cost to produce 12 eggs in 2012/p	Sale price of 12 eggs in 2012/p
Caged hens	63	251
Barn raised hens	72	265
Free range hens	85	279

Complete the following sentence:

The most profitable system in 2012 was

**_____ making a profit of _____ p on
the sale of 12 eggs. [1]**

[TOTAL: 3]



17 The photographs show INTENSIVE and EXTENSIVE systems for keeping poultry for egg production.



INTENSIVE



EXTENSIVE

Compare the advantages and disadvantages of these two systems of egg production.



The quality of written communication will be assessed.

[6]

[TOTAL: 6]

END OF QUESTION PAPER

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