Write your name here

Surname	Other names

Edexcel
Principal Learning

Centre Number | Candidate Number

Environmental and Land-based Studies

Level 2
Unit 5: Plants and Animals and their Role in Society

Friday 1 June 2012 – Morning
Time: 1 hour

Paper Reference
ES205/01

You must have:
Insert (enclosed)

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*

Information

- The total mark for this paper is 50.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

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PEARSON

Answer ALL questions. Write your answers in the space provided.

1 Study Figure 1 in the insert. It shows photographs of different groups of plants.

(a) Complete the table below to show how these plants can be classified and identified by putting Yes or No in the second and third column.

(2)

Type of plant	Does it have seeds? Yes/No	Does it flower? Yes/No
Orange		
Conifer		
Fern		
Moss		

Figure 1(a)

(b) For **two** of the plants in Figure 1(b) add the description of seeds shown in the box below.

(2)

Description of seeds:

(A) Has seeds on the outside of cones (B) Has seeds on the inside of fruits

Type of plant	Description of seeds
Orange	
Conifer	
Fern	
Moss	

Figure 1(b)

(Total for Question 1 = 4 marks)

2 Study Figure 2 in the insert. It shows examples of weed and pest species that are a problem for commercial environmental and land-based activities.

(a) Match **one** of the weed or pest species to **one** of the activities it affects in the table below.

(1)

Commercial activity	**Weed or pest species**
Golf course	
Arable farm	
Water supply	

(b) Describe the problems caused by the weed or pest species identified in part (a).

(2)

.....

.....

.....

.....

(Total for Question 2 = 3 marks)

3 (a) Vertebrate animals are classified as mammals, reptiles, birds, fish and amphibians.

Each group has distinctive characteristics as shown in the box below.

Characteristic

A Smooth moist skin

B Dry scaly skin

C Has gills

D Lays eggs with hard shells

E Feeds young on milk

Match the vertebrate to the letter of their distinctive characteristics in the table below.

Amphibian has been done for you.

(4)

Type of vertebrate	Characteristic
Amphibian	**A**
Mammal	
Reptile	
Bird	
Fish	

(b) For the two characteristics D and E, state how humans have made use of these characteristics.

(2)

Characteristic D

.....

.....

Characteristic E

.....

.....

(Total for Question 3 = 6 marks)

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4 Study Figure 4. It is a flow diagram showing sugar beet production on an extensive, commercial farm in East Anglia.

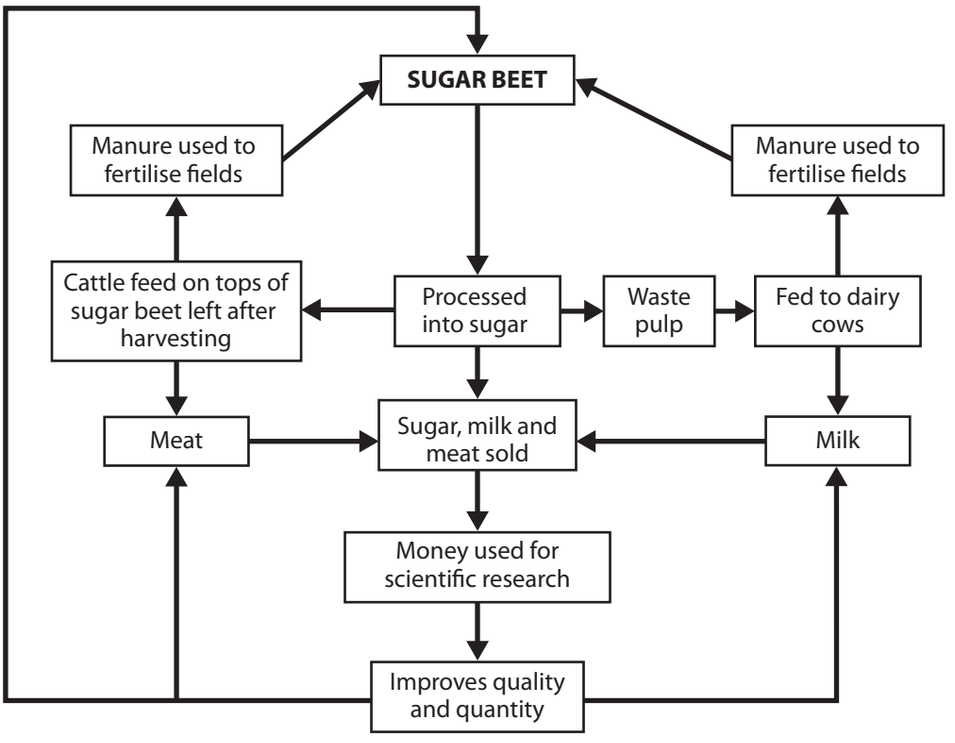

Figure 4

(a) Using the flow diagram, state:

(i) **one** link between plant and animal

(1)

.....

.....

(ii) **one** link between animal and human

(1)

.....

.....

(iii) **one** link between human and plant

(1)

.....

.....

(b) Explain the benefits of the links between humans, plants and animals on **either** this sugar beet farm **or** another farm that you have studied.

(6)

(Total for Question 4 = 9 marks)

5 Study Figure 5(a) in the insert. It shows a park in the middle of a city, surrounded by a residential built up area. The head gardener has decided to improve the plantings in the three sites shown. The environment of each site is shown on the radar graphs.

(a) Using the information from Figure 5(b) in the insert, complete the following table by choosing the most appropriate site for each of the plant types shown. For each site give reasons for your choice.

Willow has been completed for you.

(6)

Type of plant	Most appropriate site	Reasons
Willow	Site 1	It likes wet soil that can be found near the lake. Poor drainage therefore wet soil.
Tamarisk		
Buddleia		

(b) Give **one** reason why **one** of the environmental factors shown in Figure 5(a) would be helpful to the head gardener in managing the park.

(2)

(c) This urban park has heavy leisure use (family walks, dog walking, picnics, sunbathing, playing games, kite flying, cycling) which could damage the new plantings.

Describe in detail **one** technique that could be used to monitor the environmental impact of such leisure use on the new plantings.

(4)

(Total for Question 5 = 12 marks)

6 Study Figure 6(a). It shows some of the most widely used types of wood in the UK, where they come from, their uses and how vulnerable they are to extinction.

Type of wood	Source area	Uses	Vulnerability
Ash	UK, Europe, North America	Furniture	*
Bangkirai	South-east Asia	Heavy duty construction work	***
Beech	UK, Europe, North America	Furniture, flooring, musical instruments	*
Mahogany	West Africa, Central and South America	Boatbuilding, furniture, joinery	**
Meranti	South-east Asia	Joinery, doors, plywood	***
Oak	UK, Europe, North America	Joinery, furniture, flooring	*
Pine	UK, Europe, North America	Plywood, structural work, sea defences	*
Teak	South-east Asia	Furniture, joinery	**

Key:

*** Endangered species, in a critical state, close to extinction

** Vulnerable species, present practices will put them under threat in the short term

* No risk

Figure 6(a)

(a) (i) What is the source area for the species with no risk?

(1)

(ii) Describe the human activities that are causing some species of trees to be vulnerable or endangered.

(6)

(b) Explain why people in the UK should be concerned about the felling (cutting down) of vulnerable or endangered trees in such regions as South-east Asia.

(3)

(c) Study Figure 6(b) in the insert. It shows a scheme which has been designed to offer an alternative to the felling of the tropical forest.

Make recommendations to the developers and the local community to ensure that at least one of the aims can be achieved.

(6)

(Total for Question 6 = 16 marks)

TOTAL FOR PAPER = 50 MARKS

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Do not return this insert with the question paper.

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Figure 1

FIELD BINDWEED: The leaves are dark green, shiny, hairless and heart-shaped or arrow-shaped. Seedlings are uncommon in the field, with plants mainly arising from root fragments. Field bindweed is perennial, 20–100 cm tall, which trails or climbs up other plants in an anti-clockwise direction

WATER HYACINTH: is a free floating plant that is a declared noxious weed. It grows very rapidly and can be spread very easily on the hulls of boats, soles of shoes, and overland flow. It chokes waterways, jams machinery and starves water of sunlight

MOLES: Moles burrow lawns, raising molehills, and killing the lawn, for which they are sometimes considered pests. They can undermine plant roots, indirectly causing damage. A mole's diet primarily consists of earthworms and other small invertebrates found in the soil

Figure 2

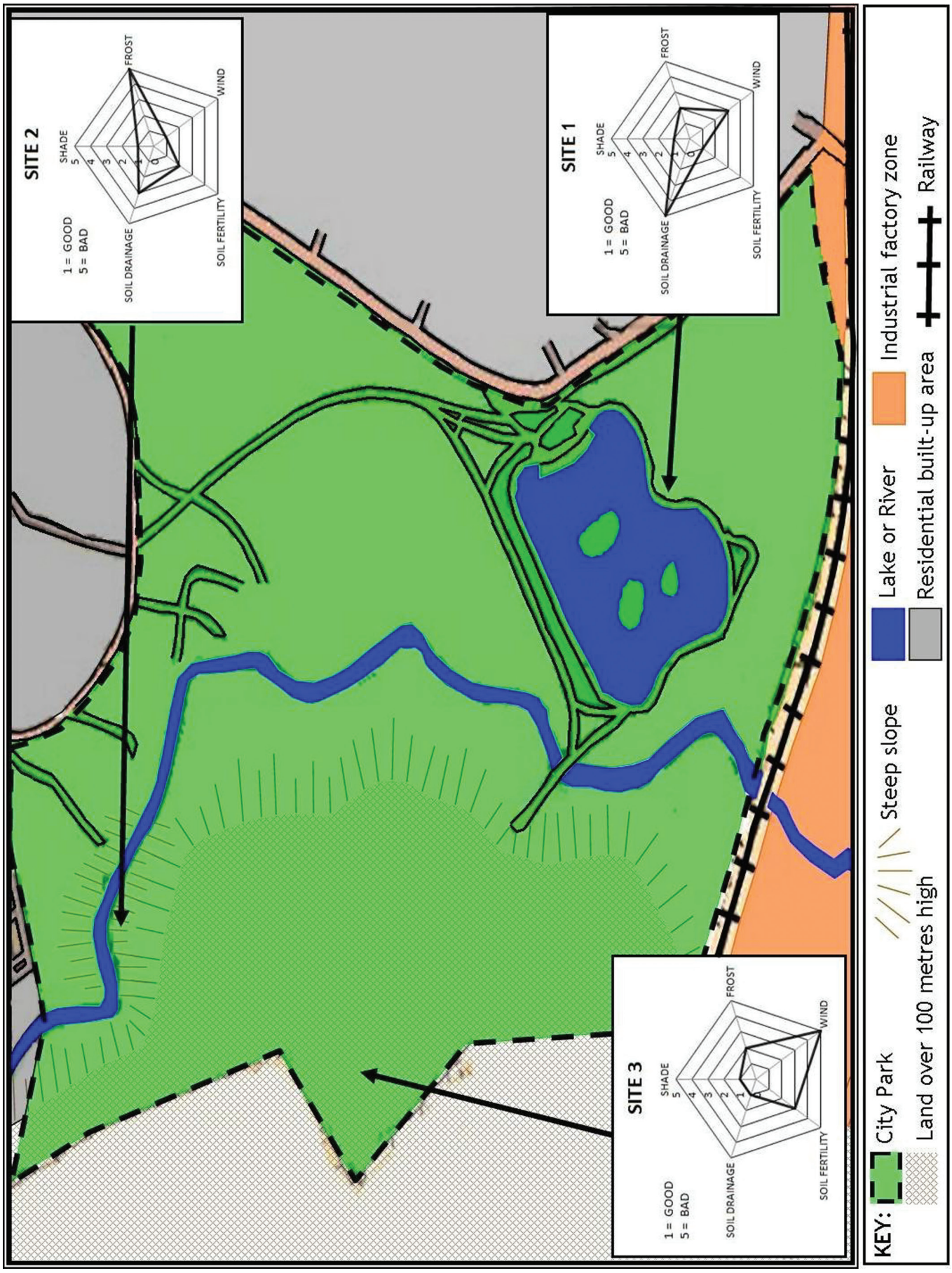
SITE 2
SHADE
FROST
WIND
SOIL FERTILITY
SOIL DRAINAGE
1 = GOOD
5 = BAD
SITE 1
SITE 3
KEY:
City Park
Land over 100 metres high
Steep slope
Lake or River
Residential built-up area
Industrial factory zone
Railway

Figure 5(a)

TAMARISK: It can grow in exposed areas that are cold and windy. It likes sunny locations and can grow in a range of soils – sandy or clay, but prefers some fertility.

BUDDLEIA: This is a very tough plant that can grow in all soils though it prefers them well-drained. It can withstand the worst frosts, though it is also well-suited to sunny locations.

WILLOW: This tree likes wet, deep fertile soils often near a river bank or lake shore. Although tough and frost hardy it does not like too much wind or sun.

Figure 5(b)

ECOTOURISM IN A RAINFOREST

2,000 plant species including

36 species of orchids

350 bird species

50 species of mammals

Many of them endangered

Stay in our beautiful hotel in the tree tops

- Buildings are made from local materials
- Open air design
- Use local produce
- Solar heated hot water
- Waste is composted or recycled
- 90% of what the traveller pays goes back into the local community
- Local naturalist guides
- Opportunity to engage with local culture

AIMS:

- Sustainable management of natural resources
- Help support local communities

Figure 6(b)

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