

[C055/SQP102]

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Higher                      Time: 2 hours 30 minutes  
Managing Environmental  
Resources  
Specimen Question Paper

NATIONAL  
QUALIFICATIONS

**All** questions should be attempted.

It should be noted that questions 11 and 12 each contain a choice.

Answers should be written in the separate answer book provided.

Square-ruled paper (if used) should be placed inside the front cover of the appropriate answer book.

## SECTION A

Answer **ALL** questions in this section

1. (a) *“Biodiversity matters because it has an important role to play in our wider strategy for sustainable development in Scotland, and because the health and variety of the natural world is a key indicator of our success in achieving sustainable development.”*

Lord Sewel, Minister for Agriculture, the Environment and Fisheries, November 1997.

The above quotation sets the scene on the importance of biodiversity. From your own knowledge and experience, give **two** reasons why it is important to maintain biodiversity on our planet.

2

- (b) Some mammal and bird populations have declined to vulnerable levels in Scotland in recent years.

(i) Give **one** named example of a bird species which is the subject of special protection measures in Scotland.

1

(ii) Describe **one** measure involved in the protection of your named example.

1

(iii) Explain how numbers of **one** named mammalian species have reached vulnerable levels in Scotland.

1

(iv) Describe how numbers of your named mammalian species could be increased.

2

(7)

2. A large number of animals have a feeding relationship with cabbage plants. The table below contains results of an ecological investigation into the animals found on cabbage plants.

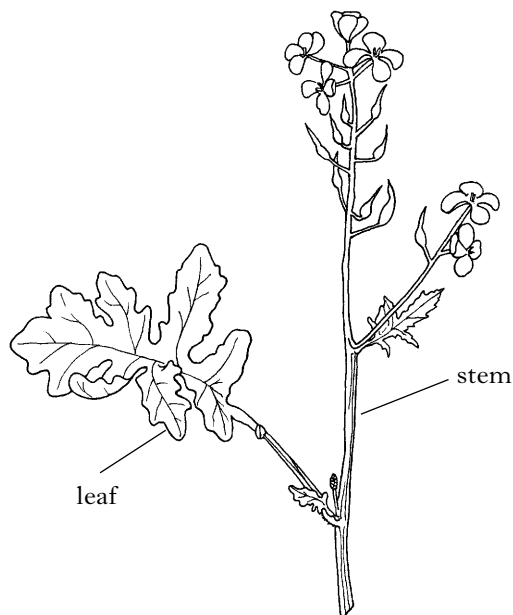
<i>Organism</i>	<i>Population density (number/m<sup>2</sup>)</i>	<i>Mean individual mass (g)</i>	<i>Feeding habit</i>
Cabbage plants	30	40	Autotrophic
Aphids	4400	0.02	Feed on contents of cabbage phloem
Butterfly larvae	20	0.15	Feed on cabbage leaves
Ladybirds	20	0.04	Feed on aphids
Hoverflies	Not recorded	Not recorded	Feed on aphids
Lacewings	Not recorded	Not recorded	Feed on aphids
<i>Apanteles</i>	Not recorded	Too small to record	Live inside butterfly larvae

- (a) Use the information in the table above to answer the following questions.

- (i) Draw a food web linking all organisms in the table. 3
- (ii) Use organisms listed in the table to draw a food chain in which the secondary consumer is a parasite. 1
- (iii) Calculate the biomass of cabbage plants per square metre. 1
- (iv) Draw a labelled pyramid of biomass representing a food chain which includes butterfly larvae. 2

- (b) Describe **one** method which could be used to measure the population density of aphids. 2
- (9)**

3. White mustard is a flowering plant. The diagram below shows part of the shoot system of this plant.



- (a) If you were using a key to identify this plant, which **two** features in the diagram would indicate that white mustard is an angiosperm? 2
- (b) The table below shows one difference between a dicotyledon and a monocotyledon. Copy the table below (**in your answer book**) and complete the table to show **three** more differences.

	<i>Dicotyledon</i>	<i>Monocotyledon</i>
1	Two seed leaves	One seed leaf
2		
3		
4		

3

- (c) White mustard is cultivated in parts of Europe both as a fodder crop and for ploughing into the soil as green manure.

Describe **one** advantage of a green manure.

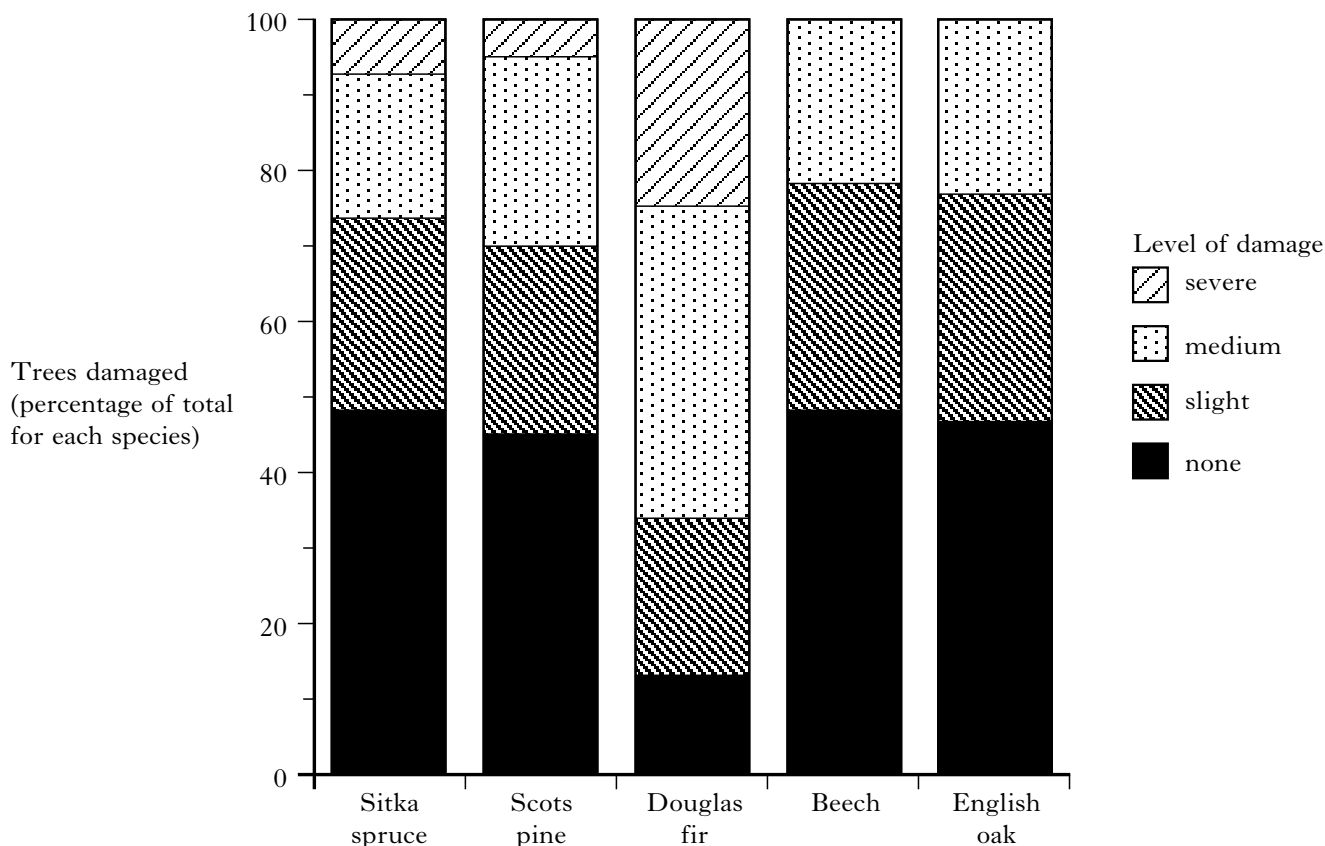
1  
(6)

4. The table below shows sources of atmospheric pollution in Britain in 1987. The figures in the table are in millions of tonnes per annum.

<i>Source of atmospheric pollution</i>	<i>Oxides of nitrogen</i>	<i>Carbon monoxide</i>	<i>Sulphur dioxide</i>
Domestic	0.05	0.38	0.16
Commercial	0.04	0.02	0.14
Power stations	0.62	0.06	2.50
Rail transport	0.04	0.01	0.01
Road transport	0.72	4.23	0.04
Total	1.47	4.70	2.85

- (a) (i) Use the data in the table to draw a bar chart, to show the sources and levels of pollution due to oxides of nitrogen. You should use the graph paper provided. **3**
- (ii) Calculate the percentage of the **total** carbon monoxide pollution due to road transport. **1**
- (iii) Damage to trees is caused by sulphur dioxide and oxides of nitrogen. Use the data in the table to identify the **three** sources which contribute most to tree damage. **1**
- (b) Identify **one other** atmospheric pollutant that could cause damage to trees. **1**
- (6)**

5. The figure below shows the damage suffered by five species of trees as a result of atmospheric pollution.



- (a) (i) Identify the species of tree which is **least** resistant to the effects of atmospheric pollution. 1
- (ii) Give **one** reason why this species is least resistant to the effects of atmospheric pollution. 1
- (iii) Identify the **type** of tree which does not appear to suffer severe damage. 1
- (iv) Give **one** reason why this type of tree does not suffer severe damage. 1
- (b) Outline **one** method of assessing damage to trees caused by atmospheric pollution. 2
- (c) Explain how local management of forests could be improved to minimise the effects of atmospheric pollutants on trees. 1
- (d) Explain how international initiatives could minimise the effects of atmospheric pollutants on trees. 2
- (9)**

6. In recent years a number of changes have occurred in the use of land for animal production. The table below illustrates some of the differences between an intensive beef production system and an extensive system.

The data for the intensive beef production system is for a lowland herd reared indoors for part of the year. The data for the extensive beef production system is for an upland herd reared completely out-of-doors.

<i>Beef production system</i>	<i>Feed protein consumption (kg/hectare)</i>	<i>Animal protein production (kg/hectare)</i>	<i>Total energy consumption (kJ/hectare)</i>	<i>Energy production (kJ/hectare)</i>	<i>Ratio of energy production to energy consumption</i>
Intensive	786	51	66	$858 \times 10^3$	$13 \times 10^3$ to 1
Extensive	33	2.2	0.40	$40 \times 10^3$	$100 \times 10^3$ to 1

- (a) Use the information in the table above to answer the following questions.

- (i) Which system produces more protein per hectare? 1
- (ii) Which system produces more energy per hectare? 1
- (iii) Give **two** possible explanations for the difference in the ratio of energy production to energy consumption between the two systems. 2
- (iv) Which system is more **efficient** in terms of energy? 1

- (b) Many consumers feel that extensive animal production systems would be more appropriate to the welfare needs of the animals concerned.

State **two** disadvantages of extensive animal production systems compared with intensive production systems. 2

**(7)**

7. Although almost 80% of the Earth's atmosphere consists of nitrogen, only a minute proportion of living organisms can assimilate nitrogen gas directly. There are many examples of human interference with the nitrogen balance in terrestrial and aquatic ecosystems. One example is the use of fertilisers on farms. This can cause severe problems for the operation of the nitrogen cycle in neighbouring water resources.

- (a) Give **two** examples of the problems for neighbouring water resources caused by the use of fertilisers on adjacent fields. 2
- (b) Explain the effects of these problems on the water resources. 3
- (c) Describe **two** methods that can be used to minimise the problems. 2

**(7)**

8. Scotland's electricity generating companies require to provide an adequate supply of cheap energy to the consumer and, at the same time, must work within economic and environmental constraints. The two Scottish electricity companies were also obliged to buy electricity from Scottish Nuclear but this obligation ended when the industry was privatised in 1996. The table below shows energy sources in Scotland in 1989.

<i>Energy source</i>	<i>Energy produced (million tonnes oil equivalent)</i>
Coal	44
Natural gas	33
Nuclear	55
Oil	77
Renewables	11
Total	220

- (a) From the information in the table above answer the following questions.
- (i) Draw a bar chart on the graph paper provided to show the amount of energy produced from each source as a percentage of the total energy produced. **3**
- (ii) What is the percentage of energy produced from non-renewable sources? **1**
- (iii) What is the ratio of energy produced from non-renewable sources to energy produced from renewable sources? **1**
- (b) Name **two** sources of renewable energy production supplying electricity to the UK national grid at the present time. **2**
- (c) Give **two** reasons why production of energy from renewable sources may be of benefit to the environment. **2**
- (d) Give **one** disadvantage to the environment of a **named** renewable energy source. **1**
- (10)**

9. Currently, more than 90% of Scotland's household waste is disposed to landfill. In its draft waste strategy, the Scottish Environment Protection Agency (SEPA) proposed to reduce this figure to 60% of its present level by the year 2005. The composition of typical household waste in Scotland is given in the table below.

<i>Household waste component</i>	<i>Proportion of total household waste (%)</i>
(i) Paper and card	27.5
(ii) Putrescibles	25
(iii) Plastics	10
(iv) Glass	7.5
(v) Metals	7.5
(vi) Textiles	5

- (a) For any **five** of the household waste components listed in the table, describe strategies to reduce the amount of each being disposed to landfill.
- (b) Name **one** strategy used by national government to reduce the amount of waste being disposed to landfill.

5

1

(6)

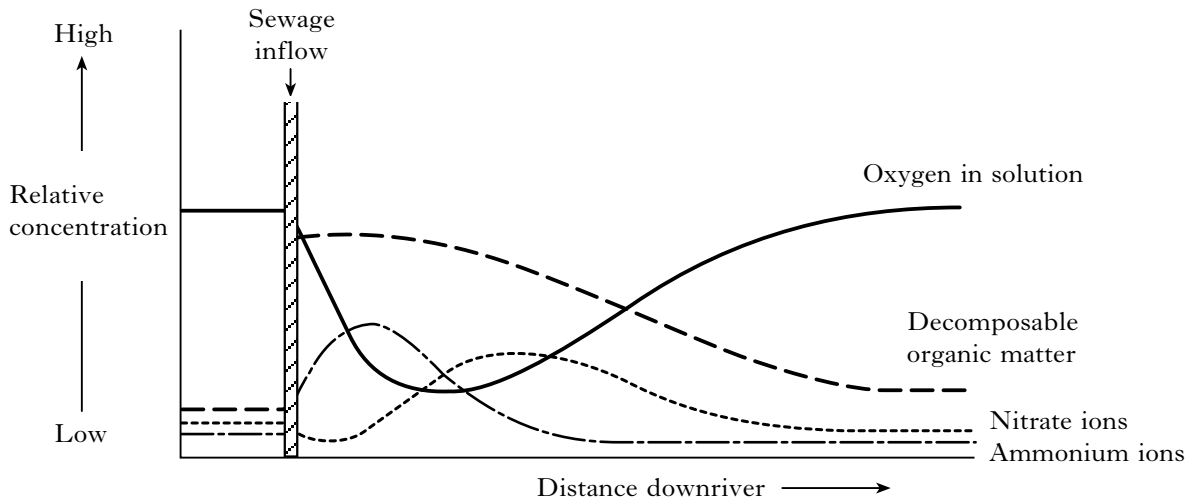
10. The data presented in the graphs opposite are derived from the analysis of samples taken during a site visit to an area where a sewage inflow enters a clean river.

Graph A shows the effect of the addition of sewage on the levels of certain chemicals in the river. Graph B shows changes in relative numbers of micro-organisms along the river. Graph C shows changes in relative numbers of invertebrates along the river.

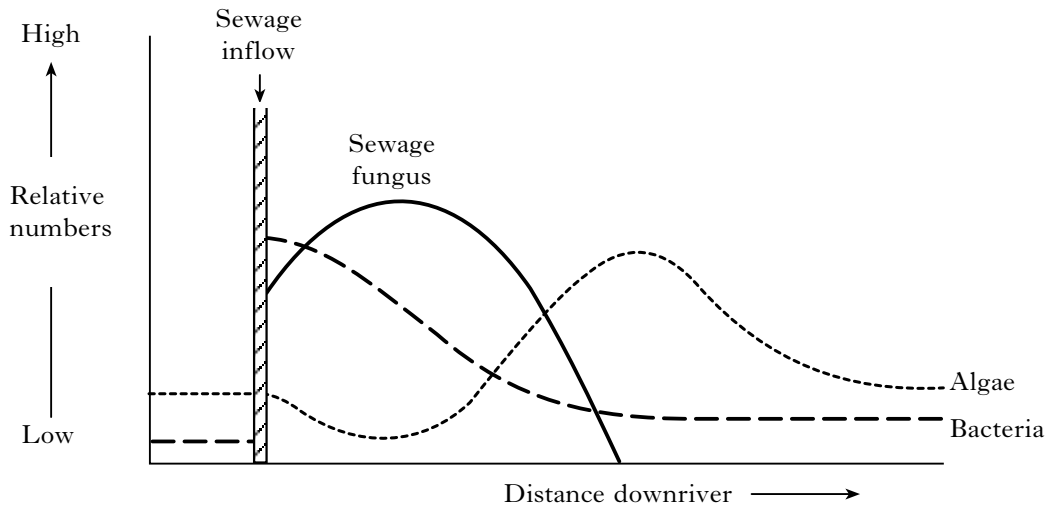
- (a) Describe and account for the initial changes downriver from the sewage inflow with respect to the concentration of each of the following:
- (i) ammonium ions 2
  - (ii) dissolved oxygen. 2
- (b) Explain why nitrate ions reach a maximum concentration after that of ammonium ions. 2
- (c) What evidence from the graphs supports the statement that sewage fungus is a decomposer? 1
- (d) Why does sewage inflow lead directly to a decline in the number of algae? 1
- (e) Why could sewage inflow lead indirectly to a future decline in the number of birds inhabiting the river? 2
- (f) Describe what is meant by the term indicator organism. 1
- (g) Describe how you might make use of one of the invertebrates shown in Graph C as an indicator organism. 2

**(13)**

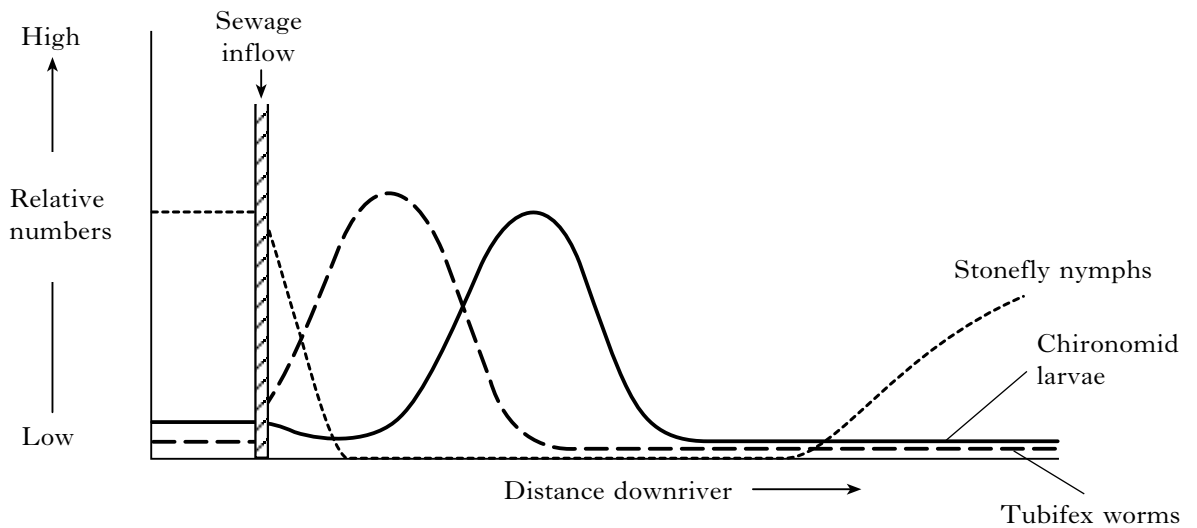
**Graph A**



**Graph B**



**Graph C**



## SECTION B

**BOTH** questions in this section should be attempted

11. Answer **EITHER A OR B**.

A. Discuss the dynamics of ecosystems under the following headings.

- |                                       |             |
|---------------------------------------|-------------|
| (a) Succession in plant communities.  | 5           |
| (b) Energy transfer.                  | 4           |
| (c) Natural environmental regulation. | 6           |
|                                       | <b>(15)</b> |

**OR**

B. The UK adopted the Common Agricultural Policy (CAP) in 1973. Since then, several changes to the policy have been made, resulting in its reform in 1992. This has led to a number of national and EC incentives for farmers.

- |  |             |
|--|-------------|
| (a) Explain why reforms to the CAP were necessary.   | 6           |
| (b) Name and describe the main benefits to farmers of <b>one</b> national and <b>one</b> EC incentive. | 6           |
| (c) Describe the disadvantages of a national or EC incentive.  | 3           |
|  | <b>(15)</b> |

12. Answer **EITHER A OR B**.

A. Describe the development and structure of an ecosystem of your choice. **(15)**

**OR**

B. Identify and analyse current and possible future conflicts of interest for a land or water use of your choice. Describe the steps that could be taken to resolve these conflicts. **(15)**

[END OF QUESTION PAPER]

[C055/SQP102]

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Higher  
Managing Environmental  
Resources  
Specimen Marking Instructions

NATIONAL  
QUALIFICATIONS

# Higher Managing Environmental Resources

## Marking Instructions

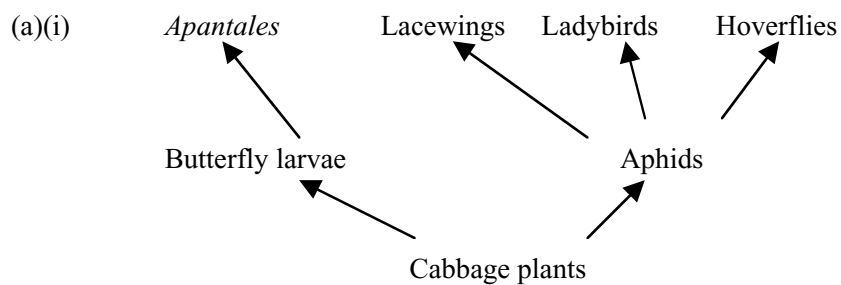
Question		Marks
<b>Section A</b>		
1	(biodiversity)	7
2	(food webs, etc)	9
3	(mustard)	6
4	(pollution)	6
5	(atmospheric pollution)	9
6	(beef production)	7
7	(fertilisers)	7
8	(energy)	10
9	(waste management)	6
10	(sewage in rivers)	13
<b>Total Marks for Section A</b>		<b>80</b>
<b>Section B</b>		
11A	(dynamics of ecosystems)	15
11B	(CAP)	15
12A	(ecosystems)	15
12B	(land use)	15
<b>Total Marks for Section B</b>		<b>30</b>
<b>Total Marks for Paper</b>		<b>110</b>
	Time allocation	2_ hours

**Question 1****Marks**

(a)	Loss of species can impact on ecosystems by damaging components of webs/cycles and therefore functions such as decomposition	1
	or	
	the wider the range of organisms, the greater is the chance of finding useful roles for them (cures for human and/or animal diseases)	1
	or	
	the wider the range of organisms, the greater is the chance of organisms providing economic benefits	1
	or	
	the wider the range of organisms, the greater is the genetic pool and the availability of genes for natural selection	1
	or	
	the wider the range of organisms, the greater is the chance that known or as yet unknown organisms may be of use to future generations	1
	or	
	other valid answer.	1
	Any 2	2
(b)	(i) Corncrake or other valid example.	1
	(ii) Species-specific initiatives such as (for corncrake) incentives for set aside	1
	or	
	restricted access to fields to preserve breeding and nesting areas	1
	or	
	hay v silage	1
	or	
	mowing from centre of field outwards.	1
	Any 1	1
	(iii) Red squirrel or other valid example	
	habitat changes or increased competition from introduced grey squirrel.	1
	(iv) Legal protection for the named mammal at national/EU level	1
	or	
	control of predators in certain areas	1
	or	
	maintenance/creation/protection of habitat as SSSI, NNR, LNR	1
	or	
	decrease competition from related or other species.	1
	Any 2	2
	<b>Total marks</b>	<b>7</b>

**Question 2**

**Marks**



Consider each species and each arrow an item, then total items = 13

- 1 mark if at least 6 items correct
- 2 marks if at least 9 items correct
- 3 marks for all levels correct, including arrows (13 items).

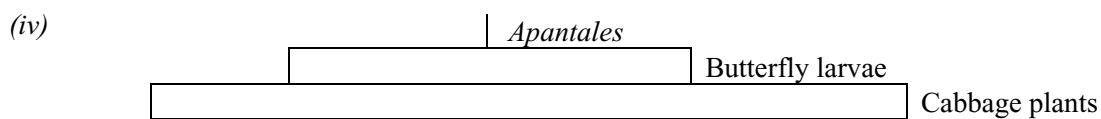
**3**



**1**

(iii) 1200 g/m<sup>2</sup>

**1**



Correct order/position  
Scale

**1**  
 **$\frac{1}{2}$**   
**2**

- (b)
- Calculate/measure the area
  - Count number of aphids and express per unit area.

**1**  
 **$\frac{1}{2}$**   
**2**

**Total marks 9**

**Question 3**

- (a) Flower 1  
 seeds enclosed in ovary/fruit 1  
 2

(b)

<b>Dicotyledon</b>	<b>Monocotyledon</b>	
Branching leaf veins	Parallel veins	1
Broad leaves	Long, narrow leaves	1
Stem vascular bundles arranged in a ring	Vascular bundles scattered throughout stem	1
Vascular bundles contain cambium	Cambium absent from vascular bundles	1
Flower parts in 4s and 5s	Flower parts in 3s	1
Other valid difference		1

Any 3 **3**

- (c) Cheap 1  
 or  
 conserves resources 1  
 or  
 improves soil structure 1  
 or  
 other valid answer 1

Any 1 **1**

**Total marks 6**

#### Question 4

(a)	(i)	Lay out of bar chart	1
		correct/suitable scale	1
		correctly labelled axes	<u>1</u>
		correctly drawn.	<b>3</b>
	(ii)	90%	<b>1</b>
	(iii)	Power stations, road transport and domestic.	<b>1</b>
(b)		Ground level ozone or volatile hydrocarbons or other valid answer.	<b>1</b>
		<b>Total marks</b>	<b>6</b>

### Question 5

(a)	(i)	Douglas fir	1
	(ii)	Taller firs more often in acidic low cloud	1
		or	
		firs planted on higher ground so more often in contact with acidic low cloud	1
		or	
		fir needles more susceptible to atmospheric pollutants	1
		or	
		other valid answer.	$\frac{1}{1}$
		Any 1	<b>1</b>
	(iii)	Deciduous/broadleaf (oak, beech)	1
	(iv)	Broadleaved trees do not grow at high altitudes	1
		or	
		deciduous habit may confer advantage	1
		or	
		other valid answer	$\frac{1}{1}$
		Any 1	<b>1</b>
(b)		Measure height of tree	1
		or	
		count number of needles/leaves	1
		or	
		record colour of needles/leaves	1
		or	
		other valid answer	$\frac{1}{1}$
		Any 1	<b>1</b>
		and	
		compare with healthy trees.	$\frac{1}{2}$
			<b>2</b>
(c)		If species more resistant to pollution were planted then less damage would be recorded	1
		or	
		other valid answer.	$\frac{1}{1}$
		Any 1	<b>1</b>
(d)		Limit power station emissions by installation of catalytic converters in chimneys (or equivalent)	1
		or	
		limit road transport to cut down on nitrogen oxides	1
		or	
		promote electric rail system to cut down on nitrogen oxides.	$\frac{1}{2}$
		Any 2	<b>2</b>
		<b>Total marks</b>	<b>9</b>

**Question 6**

(a)	(i)	Intensive ( $51 > 2.2$ )	<b>1</b>
	(ii)	Intensive ( $858 \times 10^3 > 40 \times 10^3$ )	<b>1</b>
	(iii)	Energy used to keep animals warm in intensive	1
		or	
		energy used to produce synthetic food in intensive	1
		or	
		energy used for greater automation in intensive	1
		or	
		animals may not thrive in artificial environment	1
		or	
		other valid reason.	<u>1</u>
			Any 2 <b>2</b>
	(iv)	Extensive ( $100 \times 10^3$ to $1 > 13 \times 10^3$ to 1)	<b>1</b>
(b)		More expensive food end products with extensive	1
		or	
		more difficult to control conditions (pests and diseases, food, water etc) with extensive	1
		or	
		more land required for extensive	1
		or	
		other valid disadvantage.	<u>1</u>
			Any 2 <b>2</b>
		<b>Total marks</b>	<b>7</b>

### Question 7

(a)	Algal bloom on surface of water	1
	or	
	reduction in oxygen level in water	1
	or	
	reduction in numbers of fish or other aerobic organisms in the water	1
	or	
	other valid example.	$\frac{1}{2}$
	Any 2	<b>2</b>
(b)	Fertiliser run-off from fields into waterways	1
	or	
	fertiliser promotes growth of algae/plants in water	1
	or	
	when these algae/plants die decomposing bacteria deplete oxygen level in water	1
	or	
	not enough oxygen to support aerobic life in water	1
	or	
	other valid explanation.	$\frac{1}{3}$
	Any 3	<b>3</b>
(c)	Reduction in use of fertilisers	1
	or	
	monitor oxygen content so that preventative action can be taken	1
	or	
	monitor other properties of water (eg organisms present) that indicate unusual levels of oxygen so that preventative action can be taken	1
	or	
	other valid method.	$\frac{1}{2}$
	Any 2	<b>2</b>
	<b>Total marks</b>	<b>7</b>

**Question 8**

(a)	(i)	Correct percentage calculations (20, 15, 25, 35, 5%)	1
		Correct/suitable scale	1
		Correctly labelled axes and correctly drawn	$\frac{1}{3}$
			<b>3</b>
	(ii)	95% (100 — 5)	<b>1</b>
	(iii)	209 to 11 (or 95 to 5) = 19 to 1	<b>1</b>
(b)		Water (HEP) and wind.	<b>2</b>
(c)		No polluting emissions	1
		or	
		no depletion of non-renewable resources	1
		or	
		other valid reason.	$\frac{1}{2}$
			Any 2 <b>2</b>
(d)		Destruction of habitats to build dams for HEP schemes	1
		or	
		flooding of habitats to create reservoirs for HEP schemes	1
		or	
		other valid disadvantage for named renewable energy source.	$\frac{1}{1}$
			Any 1 <b>1</b>
			<b>Total marks 10</b>

### Question 9

(a)	(i)	Reuse as animal bedding after shredding	1
		or recycle to produce lower grade product	1
		or recycle to produce same grade product if virgin fibre added.	$\frac{1}{1}$
		Any 1	<b>1</b>
(ii)	(ii)	Compost food waste	1
		or compost other organic material.	$\frac{1}{1}$
		Any 1	<b>1</b>
(iii)	(iii)	Reduce plastic wrappings	1
		or reduce use of plastic bottles/containers by using more glass	1
		or reduce use of plastic bottles/containers by using other recyclable bottles/containers.	$\frac{1}{1}$
		Any 1	<b>1</b>
(iv)	(iv)	Reuse to extend life	1
		or recycle via bottle banks.	$\frac{1}{1}$
		Any 1	<b>1</b>
(v)	(v)	Recycle aluminium cans via can banks	1
		or recycle ferrous waste.	$\frac{1}{1}$
		Any 1	<b>1</b>
(iv)	(iv)	Compost natural textiles	1
		or reuse for the same purpose	1
		or reuse for other named purpose.	$\frac{1}{1}$
		Any 1	<b>1</b>
		<b>or other valid answers for any 5 of (i) to (vi).</b>	<b>5</b>
(b)		Introduced relevant legislation: Landfill Tax (1996).	1
		<b>Total marks</b>	<b>6</b>

**Question 10**

- |     |      |   |                    |
|-----|------|---|--------------------|
| (a) | (i)  | Ammonium ions increase<br>Due to organic matter being decomposed to ammonium ions.  | 1<br><u>1</u><br>2 |
|     | (ii) | Oxygen decreases<br>Due to increased numbers of bacteria using up oxygen.   | 1<br><u>1</u><br>2 |
| (b) |      | Ammonium ions have first to be converted to nitrite ions<br>Nitrite ions are then converted to nitrate ions.  | 1<br><u>1</u><br>2 |
| (c) |      | Fungus only appears after sewage enters the river when there is a high level of decomposable organic matter; fungus numbers decrease down river as decomposable matter decreases. | 1                  |
| (d) |      | Sewage in water reduces light reaching algae so photosynthesis is reduced.  | 1                  |
| (e) |      | Sewage decreases the oxygen concentration in water which decreases the numbers of fish and therefore food for birds.  | 1<br><u>1</u><br>2 |
| (f) |      | An organism which, by its presence or absence, indicates the level of an abiotic factor.  | 1                  |
| (g) |      | Stonefly nymph only lives where there is high oxygen concentration<br>Many nymphs indicate high oxygen; no nymphs indicate low oxygen.  | 1<br><u>1</u><br>2 |
|     |      | <b>or</b>   |                    |
|     |      | Chironomid larvae/Tubifex worms live at low oxygen concentrations<br>Large numbers indicate low oxygen; few indicate high oxygen.   | 1<br><u>1</u><br>2 |

**Total marks 13**

**Question 11 A**

- (a) Succession in plant communities **Any 5**

Answers should include reference to some of the following:  
primary succession v secondary succession;  
progressive changes in plant communities from early colonisation by pioneers through to climax;  
open to closed communities;  
few species to many species/few interactions between populations to many/susceptible to environmental changes to resistant;  
importance of climate and soil in terrestrial situations;  
importance of water depth in aquatic situations.

- (b) Energy transfer **Any 4**

Answers should include reference to some of the following:  
energy flow from sun to producers to consumers to decomposers;  
biomass;  
energy losses due to uneaten and undigested parts and through respiratory loss, heat and movement;  
effect of length of food chain;  
pyramids of number/biomass.

- (c) Natural environmental regulation **Any 6**

Answers should include reference to some of the following:  
density independent factors/density dependent factors;  
birth rates v death rates;  
immigration v emigration;  
shortage of food and water;  
lack of space;  
predators and prey relationships;  
toxic wastes;  
disease.

**Total 15**

### Question 11 B

- (a) Why reforms to CAP were necessary **Any 6**

Answers should include reference to some of the following:  
problems of surplus production;  
problems of overproduction on land and other resources;  
problems of excessive expenditure of agricultural fund;  
problems of costs from guaranteed prices;  
problems of protectionism;  
past and future anomalies in benefits to individual farmers;  
benefits to farmers of environmentally friendly approaches.

- (b) Benefits of one national incentive and one EC incentive **3+3**

#### **National**

Answers should name one correct incentive and describe the relevant benefits  
-reference should be made to one of the following:

Environmentally Sensitive Area Scheme — aims to embed positive conservation into good farming practice; farmers paid to manage land in a manner that conserves and enhances landscape and wildlife habitats and reduces intensification;

OR

Countryside Premium Scheme — provides support to farmers who act as custodians of the countryside and contribute to government objectives for agriculture such as sustainable agriculture and biodiversity; designed to benefit those who go beyond normal good practice and live outside Environmentally Sensitive Areas;

Or other relevant national incentive.

#### **EC**

Answers should name one correct incentive and describe the relevant benefits- reference should be made to some of the following:

farmers paid to produce food rather than to keep land as set-side;  
high proportion of all farmers benefited from subsidies and direct payments,  
minimising inequalities;  
farmers involved in environment protection schemes (Agri-Environment Regulation)  
to enhance landscapes and protect habitats and ecosystems.

- (c) Disadvantages of one incentive **Any 3**

answers should include reference to some of the following:  
voluntary nature of most schemes;  
lack of relevance to farmers of the urban fringe;  
other valid disadvantages.

**Total 15**

**Question 12A**

Development of selected ecosystem **Any 9**

Answers should include reference to the following:

- description of roles of selected named species in competition
- description of roles of selected named species in dominance
- description of roles of selected named species in succession
- description of the effect of named climatic factors
- description of the effect of named edaphic factors.

Structure of selected ecosystem **Any 6**

Answers should include reference to the following:

- mention of at least three species representative of the ecosystem
- description of the life cycle category of any species
- description of the role of the species as a component of the community s  
vegetation

**Total marks 15**

**Question 12B**

Identification and analysis of current named conflicts of interest for selected land or water use. **Any 5**

Identification and analysis of possible future named conflicts of interest for selected land or water use. **Any 5**

Possible steps to resolve named conflicts **Any 5**

**Total marks 15**

[END OF MARKING INSTRUCTIONS]