2009 Managing Environmental Resources

Intermediate 2

Finalised Marking Instructions

Managing Environmental Resources

Intermediate 2

SECTION 1

Question 1

(a) **(i)** Native **(1)**

(ii) Himalayan balsam or Rhododendron and grasses, compete for light/space/water **(1)**

Grey squirrel and red squirrel compete for food/nest sites/shelter **(1)**

(iii) Mink and tern **(1)**

(iv) Balsam out competes native grasses or plants and does not provide food or habitat for same animals so community, plants and animals destroyed **(1)**

(v) 1. Allows native species to survive **(1)**
2. To kill/trap mink **(1)**

(b) Disease/predation **(1)**

(c) naturalised **(1)**

Question 2

(a) **(i)** 150 **(1)**

(ii) Y **(1)**

(iii) Most of country X's energy comes from other renewables, Y's does not/almost half of Y's comes from fossil fuels, X's does not/Y has nuclear, X does not
Any 2 differences where both countries are mentioned **(2)**

(iv) X **(1)**

(v) Dam built or money from China/Republic of South Africa or grants/loans from other countries **(1)**

(b) Wood/dung/wind/tidal/solar
(any 2) **(1)**

(c) Advantage – no greenhouse gases produced or still substantial supplies or lots of energy from a small amount of fuel **(1)**
Disadvantage – radioactive waste produced or expensive to set up **(1)**

(d) Coal up to early 70s or then oil or more use of renewable sources now (any 2) **(2)**

(e) Carbon dioxide/nitrogen oxide/sulphur oxides/water vapour **(1)**

Question 3

(a) **(i)** Photosynthesis **(1)**

(ii) No part of the plant is wasted or all plant used in a sustainable way **(1)**

(b) **(i)** Pyramid of biomass **(1)**

(ii) Heat/movement/indigestible material **(1)**

(iii) Parasitism **(1)**

(c) Oil/crude oil **(1)**

Question 4

(a) **(i)** Paper, glass, cans **(1)**

(ii) Plastic **(1)**

(iii) Local site to leave waste or green or reduces the waste going to landfill and jobs (any 2) **(1)**

(iv) Noise/smell/visual pollution/increased traffic **(1)**

(v) Kerb-side pick up or recycling bins **(1)**

(vi) Composting or decomposition **(1)**

(b) Materials are not being used up at such a fast rate so less harm is being done to future generations/must have or imply the future for 2 marks **(2)**

(c) Local agenda 21 **(1)**

(d) Do not overfill kettle/do not leave equipment on standby
Any 2 correct initiatives linked to less energy being used up **(2)**

(e) One mark for correct sector and one for correct labelling **(2)**

Question 5

(a) 1. Shag
3. pointed beak and stout beak or red legs and not red legs
4. curlew and long pink legs
1 mark for each correct paired statement **(3)**

(b) Has long curved beak to probe and locate prey in sand **(1)**

(c) **(i)** Curlew with arrow from bristle worm, eider duck with arrow from crab or mussel, oystercatcher with arrow from mussel or bristle worm
(any 2) **(2)**

(ii) Seaweed or plant plankton **(1)**

(iii) Acorn barnacle **(1)**

(iv) Limpet lives on the seashore or eats seaweed or is eaten by crab or common whelk
(any 2) **(2)**

(v) Sun **(1)**

(d) Temperature, wind speed, wind direction, time under water, light intensity (any 1) **(1)**

(e) 1. Death due to swallowing oil **(1)**
2. Death due to inability to photosynthesise **(1)**

Question 6

(a) **(i)** Less food for those higher up so they cannot survive **(1)**

(ii) Must not allow damage to any part of ecosystem **(1)**

(iii) Promotes understanding of how animals live or encourages personal responsibility **(1)**

(iv) Education or heavier fines or legislation **(1)**

(v) One use seems to damage another eg shipping can kill animals **(1)**

(b) Increased greenhouse gases leads to global warming and the ice caps melting.
Three points, including an explanation for 2 marks. **(2)**

Question 7

(a)	**(i)**	2 and 3	**(1)**
	(ii)	Low or very low because oxygen has additional opportunity to enter river or more opportunity to decompose sewage	**(1)**
	(iii)	The higher the oxygen level the greater the number of species, or converse	**(1)**
	(iv)	An organism that by its presence or absence shows the level of an abiotic factor	**(1)**
(b)	**(i)**	Steady then decrease in 2005 down to lower level (1) due to upgrade of sewage works resulting in more decomposition of sewage (1)	**(2)**
	(ii)	Bacteria	**(1)**
	(iii)	Increase because less ammonia means more oxygen to support more organisms	**(1)**

Question 8

(a)	**(i)**	Settlement, standing stones and motte and bailey	**(2)**
	(ii)	Less likely to flood	**(1)**
	(iii)	Confined to valley or avoid high ground	**(1)**
(b)	**(i)**	Natural because water is a natural resource or man-made because man had to make the well permanent	**(1)**
	(ii)	Caravan site, museum, information centre (any 2)	**(2)**
	(iii)	Hikers may spend the night and bring money to the hotels or shops	**(1)**
(c)	**(i)**	Pastoral (sheep) – high or steep ground	**(1)**
	(ii)	(high/exposed ground) so lots of wind	**(1)**
	(iii)	Remote from transport/cities/requires road to be constructed	**(1)**
(d)	**(i)**	Coniferous	**(1)**
	(ii)	Building/furniture/paper	**(1)**
	(iii)	Cut down trees are replaced	**(1)**
	(iv)	Walks/orienteering/riding/biking	**(1)**
(e)	**(i)**	Steep slope, rocky slope, slope facing NE 3 for 2 marks; 1 or 2 for 1 mark	**(2)**
	(ii)	Remote area so no masts	**(1)**
	(iii)	Along A708 through Moffat Dale then by track just beyond Capelgill	**(2)**
(f)		Wildlife and Countryside Act (1981)	**(1)**

SECTION 2

Option A

(a)	How acid rain is formed	• SO_2 gas produced from fossil fuels • Especially from car exhausts/industry • Dissolves in rain/clouds to make acids • Falls to ground as acid rain	**(4)**
(b)	Environmental effects of acid rain	• Kills plants and animals • Can destroy leaves with low pH so plants die • Low pH of loch/lake cannot allow fish etc to live • Corrosion of buildings	**(3)**
(c)	Ways of reducing acid rain	• Reduce car use • Use alternative fuels for cars/low sulphur fuel • Scrubbers on factory chimneys • Alternative energy sources	**(3)**

Option B

(a)	What is meant by ecosystem	• Ecosystem = community and habitat (1) • Community = all plants and animals in the area (1) • Habitat = where they all live (1) or non living part • Interaction of these two parts creates an ecosystem (1) One mark each	**(4)**
(a)	Methods of sampling plants and animals in an ecosystem	• Equipment named for plants (1) and method described (2) eg quadrat, thrown randomly to sample and plants counted within quadrat • Equipment named for animals (1) and method described (2) eg net, used in stream/freshwater and kick sampling for invertebrates	**(6)**

Option C

(a)	Recreational land uses in your named local area	• Named area (1) • Examples of recreational land uses, parks/football pitch/cinema/ ice rink etc (4)	**(5)**
(a)	A conflict of interest between local groups of people and its resolution	• Name the two groups (2) • Describe the view of both (2) • Give a possible resolution (1)	**(5)**

[END OF MARKING INSTRUCTIONS]