CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2013 series

0680 ENVIRONMENTAL MANAGEMENT

0680/13 Paper 1, maximum raw mark 60

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

CAMBRIDGE
International Examinations

General notes

Symbols used in Environmental Management mark schemes.

/ separates alternatives for a marking point – other valid ways of expressing the same idea are also credited

; separates points for the award of a mark

[3] indicates the number of marks available

italic indicates that this is information about the marking points and is not required to gain credit
italic text is also used for comments about alternatives that should be accepted, ignored or rejected

ora or reverse argument – shows that an argument from an alternative viewpoint will be credited

AW alternative wording, sometimes called 'or words to that effect' –
AW is used when there are many different ways of expressing the same idea

( ) the word / phrase in brackets is not required to gain marks but sets the context of the response for credit
e.g. (nuclear) waste – nuclear is not needed but if it was described as a domestic waste then no mark is awarded

<u>volcanic</u> underlined words – the answer must contain exactly this word

ecf error carried forward – if an incorrect answer is given to part of a question, and this answer is subsequently used by a candidate in later parts of the question, this indicates that the candidate's incorrect answer will be used as a starting point for marking the later parts of the question

1 (a) (i)

biotic component	*abiotic component*	*interaction*
animals	soil	competition
plants	climate	predation
producers		
consumers		

6 – 8 for **(3)**, 3 – 5 for **(2)**, 1 – 3 for **(1)** **[3]**

(ii) crop farmers;
remove natural vegetation;
apply agrochemicals; **[3]**

(b) *woodland:*

absorption of carbon dioxide;
ref greenhouse effect/global warming;
aesthetic factor;
loss of species;

bees:

ref pollination;
ref fruit etc. production;
ref wider effects (*as long as linked to reproduction/ plants in the future*); **[4]**

[Total: 10]

2 (a) (i) correct plots; **[1]**

(ii) weather etc. might cause problems thus births reduce, deaths increase;
unknown advances in medicine;
epidemics;
agriculture;
wars; **[3]**

(b) (i) *must be comparative*

2025 more young;
correct ages;
more old;
correct ages; **[3]**

(ii) build schools;
build hospitals (esp. with child units);
geriatric units; **[3]**

[Total: 10]

3 (a) (i) water;
carbon dioxide;
light;
minerals / or named;

all 4 for **(2)**, 2 or 3 for **(1)**, **[2]**

(ii) *desert*:
temperature (too high) (accept) heat / water (too little);

tundra:
temperature (too cold) (reject) heat; **[2]**

(b) (i) best improvement in 60s;
worst in 90s;
gets better to 60s;
then falls away;

up to 70s:
plant breeding / better farm technology (any eg);
after 70s:
reached biological limit; **[4]**

(iii) costs;
an example;
e.g.
crops require vast amounts of land;
large quantities of water; and fertiliser;
pests and weeds can develop a resistance to GMOs poisons, and can result in creation of super-pests which are far more difficult to control; **[2]**

[Total: 10]

4 (a) (i)

process	***change on removal of vegetation***	***reasons***
interception	decreases	foliage blocks falling rain
transpiration / evapotranspiration	decreases	leaves are main source of water
run-off	increases	trees obstruct free water flow

6 for **(3)**, 4–5 for **(2)**, 2–3 for **(1)**, 0 or 1 for **(0)** **[3]**

(b) (i) drainage; **[1]**

(ii) correct plot;
labelling; **[2]**

(iii) *soil that is mostly sandy*:
dries out;
loses nutrients;

soil that is mostly clay:
ref waterlogging;
ref. lack of air; **[4]**

[Total: 10]

5 (a) (i) ref HEP;
ref flood control;
irrigation;
water for other purposes (but not collect water unqualified); **[2]**

(ii) flooded farms / villages;
loss of river fish;
reduced water quality;
water borne diseases;
earthquakes; **[3]**

(iii) drought caused by lack of normal rain;
dam unlikely to cause this;
might make drought worse downstream due to stopping water flowing; **[3]**

(b) excessive rain;
water not able to drain properly; **[2]**

[Total: 10]

6 power stations

(a) (i)

unsustainable	***sustainable***
coal	solar
gas	wind
nuclear	wave
oil	geothermal
	HEP
	biomass

each mistake loses 1 mark **[3]**

(a) (ii) conservation methods in the home;
transport methods (public transport, walking etc.);
use of renewables / alternatives to supplement; **[3]**

(b) (i) *thermal*:
cheaper to build;
less dangerous;
no long term waste problems;

fuel more expensive;
operation costs higher;

nuclear:
expensive to build;
dangers major;

cheaper fuel;
cheaper to run; **[4]**

[Total: 10]