UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2012 question paper

for the guidance of teachers

0680 ENVIRONMENTAL MANAGEMENT

0680/11 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 must be read in conjunction with the question papers and the report on the examination.

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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

[max 3] the number shows the maximum number of marks available for the question where there are more marking points than total marks available

[max 3] when part of the marks of a question must come from part of the mark scheme, this is indicated by non-bold marks showing the internal maxima for different parts of the question
these non-bold marks are also used to show marks for bands where banded mark schemes are used

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

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1 (a) (i) from top left to bottom right:
33, 14, 80, 95;;

all 4 for 2, 2 or 3 for 1, 0 or 1 for zero **[2]**

(ii) insolation;

[1]

(b) (i) greenhouse gases;
two of carbon dioxide, water vapour, CFCs, methane, nitrous oxide; **[2]**

(ii) cycle / walk / public transport / insulate house / use less power through turning off light / not using standby / AVP; **[1]**

(iii) burning fossil fuels (in cars / power stations);
releases carbon dioxide;
OR
cultivating rice;
releases methane;
OR
keeping cattle;
releases methane;
OR
using aerosols / fridges / AC;
releases CFCs;
OR
deforestation;
explanation of reduced carbon dioxide uptake;

[max 4]

2 (a) (i) mainly coastal;
in belts; **[2]**

(ii) plate boundaries;
which move / collide; **[2]**

(b) (i) fertile soils;
many precious stones / AW;
beautiful environment / tourism;
geothermal energy;
AVP; **[max 2]**

(ii) volcano (more) predictable;
volcano less widespread effects; **[2]**

(iii) quality of buildings;
some aspect of disaster relief;
prediction (for volcanoes); **[max 2]**

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3 (a) (i) evaporation and transpiration **C**
infiltration **D**
interception **A**
run-off **B**;;

all 4 for 2, 2 or 3 for 1, 0 or 1 for zero **[2]**

(ii) photosynthesis;
through the roots; **[2]**

(b) (i) correct plot;
sectors identified by key; **[2]**

(ii) lots of irrigation;
which helps draw up salt; **[2]**

(iii) irrigation water on surface;
salt drawn to soil surface;
evaporation leaves salts behind;
hard crust of salt forms; **[max 2]**

4 (a) (i) *similarities*:
slow early growth;
fast growth in middle;
(note: one mark for idea of both rise) [max 2]
differences:
plateau / AW in small mammal population, none in human population [max 1] **[max 3]**

(ii) small mammal population regulated / limited;
by food / predators / AVP, human population not (yet); **[2]**

(b) (i) 22 years; **[1]**

(ii) better food / diet;
medical care;
sanitation;
AVP; **[max 2]**

(iii) AIDS;
lack of investment;
impact of North / South divide; **[max 2]**

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5 (a) (i) producer
photosynthesis
consumer(s)
energy
carbon
nitrogen;;; (carbon and nitrogen either order)

all 6 for 3, 4 or 5 for 2, 2 or 3 for 1, 1 or 0 zero **[3]**

(ii) wheat ⟹ leatherjacket ⟹ nematodes;;
1 for direction of arrows; 1 for all 3 correct; **[2]**

(b) (i) pesticides / accept insecticides; **[1]**

(ii) get into food chain;
kill / damage (higher) predators / man;
bioamplification, or described; **[3]**

(iii) named pest with named predator introduced as bio control; **[1]**

6 (a) (i) oxygen AND
water; **[1]**

(ii) tick box for pH 5.0 or 6.8;
accept any value or range between 5.5 and 8 **[1]**

(iii) sand;
clay;
sand; **[3]**

(b) *extensive*, uses small inputs of (labour / money / fertiliser etc.);
intensive, uses high inputs of (labour / money / fertiliser etc.);
subsistence, producing enough for ones needs / AW;
commercial, farming for sale of products; **[4]**

(c) add fertilisers;
add manure / AW;
grow legumes; **[max 1]**

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