CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2013 series

0680 ENVIRONMENTAL MANAGEMENT

0680/12 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.

General notes

Symbols used in Environmental Management mark schemes.

/ separates alternatives for a marking point – other valid 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) at equator less atmosphere to go through;
warms smaller area;
at an angle at poles / overhead / perpendicular / direct at equ
ref to reflection / snow at poles and not equator;
concentrated at equator;
long periods with no sunlight at poles;

ora where applicable

(b) (i) much smaller in extent / ice decreased in amount / bigger area of sea;
more shrunken to left / west, ora; **[2]**

(ii) increased levels of greenhouse gases / named gases which are correct (over that time);
from (correct source);
which has increased (e.g increased use of cars / fossil fuels / deforestation increase);
causes gh effect / described;
which causes increased temperature;
melts ice; **[3]**

(iii) named alternative energy sources introduced (once);
provision of incentives for energy conservation / domestic alternative energy usage;
taxing energy from fossil fuels to reduce usage;
promotion or public transport;
afforestation projects;
recycling as long as linked properly to energy saving;
note: max (1) if no reference to government doing it **[2]**

[Total: 10]

2 (a) *1 mark for:*

tundra:
fishing / whaling/ hunting for sensible animal;

trf:
Traps for arboreal animals/ ground livers / blowpipes /poison

desert:
roots/tubers etc. / traps;

2 marks for:

poor lands so not coveted by others;
no competition;
these lands no/little use for agriculture;
remoteness;
high food availability;
idea of sustainability linked to food abundance, low population; **[3]**

(b) (i) 20-8 = 12;
12/20 × 100 = 60 %; **[2]**

(ii) correct plot;
straight line joining points; **[2]**

(iii) there has been a continued fall in forest cover; **[1]**

(iv) conserving encourages tourism / forests attract tourists / people;
which brings in money / profit;
which can be used to further conserve and fund other projects;
reference to ecotourism; **[2]**

[Total: 10]

3 (a) (i) C,
D,
E

(0) for 0 or 1, **(1)** for 2, **(2)** for 3

(ii) *taiga*: coniferous;
conical;
evergreen;
leaves small/ waxy / tough / needle;
shallow roots;
leaves all over tree ;

TRF: spreading shape;
evergreens overall but loose leaves all time;
large /broad / soft leaves
buttress roots;
leaves only at top ;

monsoon:
as TRF;
deciduous;
leaves as TRF;
no buttresses on trees;

max 1 if no evidence of comparison, i.e. just two descriptions **[2]**

(b) (i) carbon sink / or the idea of reducing gh effect / global warming;
ref biodiversity / species / habitat loss;
ref medicines etc.;
ref wood;
ref watershed protection, stop flooding;
ref food;
ref reduced (soil) erosion;
ref leaching;
ref effect on rainfall; **[3]**

(ii) efficient timber use;
recycle wood / products;
use wood alternatives;
agroforestry / described;
tree planting;
selective felling;
idea of licenses / quota or other attempt to legally limit logging, (once);
ref alternative ways of finding land for farming / building;
ref nature reserves / green belt;
pollarding; **[3]**

[Total: 10]

4 (a) (i) Q,
Q,
P
(0) for 0, **(1)** for 1 or 2, **(2)** for 3

(ii) *food:*
ref to penetration of light;
more nutrients;
allows plants / phytoplankton to grow;
food chain;

oil:
deep sea not accessible;
too deep to have oil;
ref to how oil formed (plants);

tourism:
ref access;
ref beaches ;
ref corals / swimming / boating; **[2]**

(b) (i) any 2 aspects of modern technology;

radar / satellites;
easier to find fish;

big boats;
process more;

large nets;
catch more;

mesh size (too) small;
catch more younger fish;

refrigeration;
can go further but still keep fish;

population growth;
increased demand;

fishing all year / taking fish of all ages;
effect on numbers / young / reproduction; **[4]**

(ii) traditions of fishing/ way of life arguments;
population increase argument;
hunger;
economics;
difficulty of monitoring / ignoring rules / quotas; **[2]**

[Total: 10]

5 (a) (i) 23.6 + 16.4 % / 100 – 60 = 40 %;

(ii) nitrates / phosphates / fertilizer / nutrients / manure enter
stimulates algal/ plant, growth / algal bloom;
block light;
plants / algae die;
decompose;
uses oxygen (*do not allow if in context of algae using oxy*
kills / eq fish / animals in lake;

(b) (i) V and W **[1]**

(ii) near trees (as long as not clearly below); **[1]**

(iii) correct plots; **[1]**

(iv) humans remove forests;
to farm / urbanize;
less vegetation = (more) run off / ora;
because vegetation intercepts / absorbs water;
ref soil absorbs water;
lay concrete / asphalt / roads, etc.;
ref humans increase run-off;
ref contamination / pollution of run off;

credit relevant ref to info in table; **[3]**

[Total: 10]

6 (a) (i) N – mantle;
O – core; **[2]**

(ii) crust;
tectonic; **[2]**

(b) (i) ref plates moving toward each other;
destructive/ (boundary);
subduction / or described;
ref friction;
plate stick;
pressure released;
ground shakes; **[3]**

(ii) coastal;
near epicentre;
tsunami / tidal wave;
ref flooding;
low lying coast;
ref water contamination; **[3]**

[Total: 10]