UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2011 question paper

for the guidance of teachers

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

• Cambridge will not enter into discussions or correspondence in connection with these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2011 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

1 (a) (i) photosynthesis;

   (ii) soil/eq; ® ground
         carbon dioxide;
         light/radiation; (R) rays
         chlorophyll;   [4]

   (b) (i) trickle drip;   [1]

   (ii) agriculture which ensures that conditions are still as good for the practice for future
         generations;   [1]
         (Reject use of word sustainable or its derivatives as key part of answer)

   (iii) A;
          For A:
          water directed at roots;
          less lost (in evaporation);
          B:
          water broadcast/eq ;
          so can evaporate ;
          doesn't get to plant;
          For Either:
          ref. salinisation (i.e. less with A, or more with B. Or can say more with A as long as
          discuss low leaching with A.);   [3]

                                                                              [Total: 10]

2 (a) (i) hunter-gatherer;   [1]

   (ii) a keeper of stock/cattle/AVP;
         who moves his animals to fresh pasture when necessary;
         does not stay in one place (stand alone mark);   [2]

   (b) (i) tourism which caters to those interested in natural environments/eq;
             uses tourist money to protect environment;
             env must be protected to keep money coming in;   [2]

   (ii) conservationists want to protect animals that might affect nomadic pastoralists – latter
         might kill animals etc. that conservationists want to keep ;
         and then egs such as:
         wildebeest/herbivores, compete with cattle;
         lions/other predators predate/eat cattle;
         restricts movement of nps/reluctance of nps to share home/land   [3]

   (iii) any 2 of:
          reclamation/restoration;
          replace overburden/add soil; ® just filling hole
          add fertiliser/eq/;
          plant (trees etc.);
          allowing water to infill depressions – lakes;
          levelling spoil heaps;   [2]

                                                                              [Total: 10]

3 **(a)** **(i)** A   evaporation;
B   transpiration/evapotranspiration;
C   precipitation/rainfall/eq;
all 3 for 2; any 2 or 1 for 1

(ii) infiltration water enters soil/ground (and then drains away);
runoff does not enter soil/flows along ground (before draining to rivers sea);   [2]

(iii) desalination;   [1]

(b) **(i)** 32.8;   [1]

(ii) correct bars drawn;   [1]
(tuna must just be below 9th line, shrimps must be in middle of 7th and 8th lines)

(iii) El Nino;
reversal of current/current changes direction;
(too) warm/eq;
fish not adapted to warm;
upwelling stops;
low nutrients;
so less food/eq;
fish migrate/eq;   [3]

[Total: 10]

4 **(a)** **(i)** thermometer;
in the shade/not in direct sunlight/S screen;   [2]

(ii) **Campbell-Stokes**;
clear glass sphere;
concentrates light on recording sheet which is burnt;
OR **Jordan's**;
can with pinhole;
Sun darkens photosensitive paper inside when shines through hole;   [2]
(NOTE. Can give one for correct name of device as above. General idea: give one for idea of paper burning or being affected in some way by light, second mark for a feasible way of doing this)

(b) **(i)** hours/duration/amount of sunshine, per (or /) month;
°C/F;   [2]

(ii) solar;   [1]

(c) **(i)** anemometer;   [1]

(ii) birds killed; aesthetic; noise;
uses land, qualified (e.g., agricultural, beautiful);   [2]

[Total: 10]

5 (a) fishing for food/eq; (Must say or imply **food**)
wave/tidal energy;
tourism/recreation;
bulk/large/heavy/eq transport;
drinking water/irrigation/domestic water use; (but only if some suggestion of 'must be treated first')
oil/gas/eq;   [2]

(b) (i) spills/leaks;
destroys marine life;
poison fish/kill birds; (not just fish killed or die)
oiling of birds;
ref. to O_2 falls/eq;
oiling/coastal pollution, beaches;
ref. economic effects (qualified);   [3]

(ii) booms/double hulls/detergent/burning/sucking up   [1]

(c) (i) along rivers;   [1]

(ii) increased levels of nutrients or named;
increased algal growth;
algae die;
increased organic matter;
decomposes;
lowering oxygen;
eutrophication;
'fish die' (qualified, e.g. lack of oxygen, food)/eq (e.g. aerobes/eq); ® death of
<u>organisms</u>/eq   [3]

[Total: 10]

6 **(a)** **(i)** developing: 3.3/3.3 billion;

    (ii) developed: 0.3 billion (ignore other attempts at this figure as long as correct o~~ ~~ there somewhere!!);

    (iii) developing more to start with/bigger area of whole world/ora;
any social factors **dealt with comparatively**;;
(e.g. family planning/poor/large families/looking after the parents/no (pension systems/ eq), ref. birth rate)
transfer of medical knowledge from 'west' (in 1950s)   [3]

    (b) **(i)** A: developing AND
B: developed;   [1]

    (ii) In A:
high(er) birth rate/more young people/ora A/B;
data;
low(er) life expectancy A/B;
equal numbers of men and women at all ages;
In B:
more middle-aged/more economically active;
data;
many more older people/high(er) life expectancy/death rate low(er);
data;
more women than men in older age groups or quoted;
One mark for A young population, B ageing, that is, BOTH statements;
(Notes:
Where say low for A must say high for B to get comparative.
Can get 4 for 4 descriptive points
OR for fewer than 4 but with data supporting any given, up to 2
So max for data quotes is 2)   [4]

[Total: 10]