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

0680/11 Paper 1, maximum raw mark 60

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1 (a) (i) nitrogen; oxygen; [2]

(ii) carbon dioxide [1]

(b) (i) **A** lacks detail/converse/owtte; [1]

(ii) 2 of sulphur dioxide , NO_X, carbon dioxide;
dissolve in rain;
it becomes acid;
which dissolves rock; [max 3]

(iii) temperature inversion;
cold air from below cannot rise;
pollutants cannot get into higher parts of atmosphere;
therefore cannot be dispersed by wind; [3]

[Total: 10]

2 (a) (i) mantle; [1]

(ii) hotter; softer; pliable; high density (A) heavier (ora in any case); named differences in minerals;
(R) molten [2]

(iii) crust thinner under sea/eq; [1]

(b) (i) discovery:
visual search; idea developed; (e.g. remote places, diving);
geological survey idea;
test drill;
extraction:
oil wells drilled;
pumping/natural pressure differences;
pipes; [4]

(ii) double hulls;
detergent/booms/biodegradation/burning; [2]

[Total: 10]

3 (a) (i) N cycle; **A** N_2/nitrogen;
B nitrogen fixation/nitrification;
C protein/amino acids/DNA/nucleic acid;
D denitrification; 3 all, 2-3 2, 1 1

C cycle **A** CO_2/carbon dioxide;
B photosynthesis;
C sugars/starch/named compound with starch;
D respiration/combustion/decomposition 3 all, 2-3 2, 1 1 [3]

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(ii) nitrogen [1]

(iii) eutrophication;
algal bloom;
algae die;
bacteria decompose the dead algae;
lower oxygen;
death of suitable organism (i.e. any aerobe); [2]

(b) (i) passed from one trophic level/eq to next;
bioamplification;
tiny amount of applied gets concentrated;
leads to death/some sub lethal effect (e.g. reproductive);
death of non-target species;
e.g. (bees); [2]

(ii) biological control;
using predator/parasite/disease to reduce numbers;
example;
does not pollute;
evolution of resistance avoided;
pest resistant strains; [max 2]

[Total: 10]

4 (a) (i)

Taiga	3;
Tropical Rainforest	4;
Desert	2;

[3]

(ii) 3; [1]

(b) (i) long/deep roots;
widespread roots;
waxy above ground parts;
store water;
succulence/owtte;
spines;
reduced/no leaves;
all above up to 2 marks and then some discussion of at least one of them (i.e. why this helps) for third; [3]

(ii) plant cover gone/reduced/owtte;
erosion;
wind/water;
soil lost; [3]

[Total: 10]

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5 (a) (i) the amount of HEAT energy;
striking the Earth;
from the sun; [max 2]

(ii) D;
at low latitudes/eq less heat lost by scattering/reflection/absorption;
because atmos path less/shorter/eq
at low latitudes a ray heats up less ground/ora;
if give A or B allow 2 marks but only with explanation [max 4]

(b) (i) electricity :light; AND
heating :heat; [1]

(ii) fossil fuels/named examples; [1]

(iii) fossil fuels running out;
causing pollution/named examples; [2]

[Total: 10]

6 (a) (i) correct plots;;
addition of labels for IAS 54 *and* Embrapa 16; [3]

(ii) more recent varieties give bigger yield/ora;
(If discuss increasing (ORA) must be related to time) [1]

(iii) plant breeding/genetic engineering;
has selected for /eq higher yields; [2]

(b) (i) USA [1]

(ii) EU; [1]

(iii) No;
because exporters and importers are both in North,
except Aus, which is 'north' and Argentina
which is not enough to say s to n; [2]

[Total: 10]

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