CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 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 October/November 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

CAMBRIDGE
International Examinations

1 (a) (i) lowest shale band; [1]

(ii) sedimentary [1]

(iii) **any of the limestones:**
building/fertiliser or detail/cement/aggregate roads/desulfurisation/glass/blast furnace or description of used/AVP;
sandstone:
building/statues/coasters;
shale:
bitumen/oil bearing; [1]

(iv) (any) limestone;
heating;
and (high) pressure; [2]

(b) (i) (from) dead plants/eq;
pressure/time; [2]

(ii) less coal is used in 2005;
oil was less than coal, now more;
gas is more, but still less than coal;
renewables much more, but much less than coal;
(credit one for any calculation to illustrate a point) [2]

(iii) rise of renewables;
coal stocks depleted/owtte;
worries about pollution/ named problem (e.g. greenhouse effect); [1]

[Total: 10]

2 (a) (i) millet correctly plotted AND key;
y–axis labelled yield AND kg per hectare (IGNORE x label); [2]

(ii) wheat;
1507 (kg hectare)/ %; [1]

(b) fertiliser;
improved varieties/(A) GM;;
irrigation;
use of pesticides/herbicides;
machinery but only if qualified; [3]

(c) soil ruined;
by fertilisers;
pesticides dangerous;
loss of fish/frogs;
because of chemicals;
high cost of purchasing e.g. fertiliser/pesticides (once). [4]

[Total: 10]

3 (a) (i) A loss of vegetation/forest, allows more water to drain off;
B slope angle steeper increases runoff (whether vegetated or not), but less on forested slopes;
C rainfall intensity increases runoff and thus erosion risk, very much more on bare ground than on forested; [3]

(ii) plough perpendicular to slope/along contours (to form ruts);
which slows water runoff;
traps water;
thus slowing soil erosion downhill; [3]

(b) (i) mostly large farms;
calculation or data quoted to support (e.g. 46% over 1 000 hectares);
few small farms;
figures again (e.g. only 1% below 10 hectares)/none less than 2 hectares; [2]

(ii) most people who farm small farms are not owners but pay rent;
cannot afford/are not willing to implement soil conservation measures;
large farms owned by richer;
thus more likely; [2]

[Total: 10]

4 (a) phytoplankton;
sea birds/cormorant/humans/sharks/tuna anchovy;
tuna/anchovy; [3]

(b) less phytoplankton;
fewer zooplankton and anchovy (small fish);
reduced catches of large fish/sharks;
reduction in seabirds; [3]

(c) zooplankton:
numbers will rise because;
not eaten by anchovy;

seabirds:
numbers will fall/they (die/migrate);
as less food in form of anchovy; [4]

[Total: 10]

5 (a) (i) **A** tundra;
B taiga;
C savanna;
D tropical rainforest; [2]

(ii) reduce water loss/eq, protect against animals;
(fleshy/thick/large/eq) stems/roots;
get deep down water;
long, shallow roots; [4]

(b) vegetation removed/land becomes bare;
by overgrazing animals/humans;
soil becomes unstable due to lack of roots;
loses water holding;
blows away; [4]

[Total: 10]

(a) (i) **C** → **A** → **D** → **B**;;

open pit/cast; [3]

(ii) add back overburden;
add soil;
fertilise;
plant (trees/eq); [3]

(b) (i) 2020; [1]

(ii) conservation stated;
methods listed (alternative/renewable energy sources or named, less use by insulation);; [3]

[Total: 10]