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Cambridge International General Certificate of Secondary Education

MARK SCHEME for the May/June 2015 series

0680 ENVIRONMENTAL MANAGEMENT

0680/11 Paper 1, maximum raw mark 60

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1 (a) (i) mostly astride / in tropics / between tropics / (the US / SW USA / Californian) desert;
ref. to further point about tropics, e.g. (largest desert / 1 or 2) on Tropic of Cancer / (most deserts / 3) on Tropic of Capricorn;
(mostly) on west of (continent / coasts) / eq.;
correct ref. to size of desert in Africa / Arabia / Australia;
none in high latitudes / eq.; [3]

(ii) dry / low rainfall;
high temperatures (not just hot / very hot) (in day);
cold at night;
strong winds; [2]

(b) (i) over(grazing / cultivation);
deforestation / eq.;
soil erosion / soil degradation / loss of nutrients;
climate change;
(leading to) temperature rise / reduced rainfall; [2]

(ii) tree planting (accept afforestation);
(roots) bind soil / increase intercepted rainfall / shelter from wind erosion;
stops being blown away / washed away;

terracing / build barrier across slope;
soil is on flatter land;
stops soil being blown away / washed away;

contour ploughing / ploughing around the slope;
reduces run-off;
stops soil being washed away;

wind breaks;
plant trees;
stops soil being blown away / washed away; [3]

2 (a) (i) fuelwood / wood / biomass / plants / timber; [1]

(ii) burning / combusting / eq. wood / eq.;
turns water to steam;
this turns / moves turbine; [3]

(b) (i) ref. plants absorb carbon dioxide from atmosphere;
in photosynthesis / eq.;
net CO_2 emission to atmosphere is zero / reduced;
ref. carbon neutral;
ORA for coal for any of the above;

One mark for idea of coal having higher proportion of carbon / ORA; [3]

(ii) carbon monoxide / water vapour / sulfur dioxide / (accept SO_2) / nitrogen oxides / NOx; [1]

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(c) landfill;
developed with uses, e.g. landscaping;

used as fertiliser / eq.;
developed with ref. to increase growth / yield; [2]

3 (a) (i) grade II = 100 – (4.2+16.2+1.3) = 78.3;
78.3 plotted correctly (allow ECF); [2]

(ii) gone down from (industry / implied, e.g. quotes figures;
by about 400 million tonnes;
not much / no change in domestic;
domestic already low so small scope for further change;
clean air acts;
use of alternative energy sources to fossil fuels;
scrubbers / filters / (flue gas) desulfurisation;
moving industry out of Germany;
domestic small proportion so not worried about as much; [4]

(b) sulfur dioxide;
NOx;
dissolve / react in (rain) water;
lowered pH / eq.;
named acid; [4]

4 (a) (i) A 73, B 113, C 373, D 413

All four for two marks; two or three for one mark. [2]

(ii) 486 and 486;
they are the same (allow ECF); [2]

(b) (i) match:
there are areas where agriculture is high value and no / little drought; ORA
example;

mismatch:
there are areas where agriculture is high value but drought is extreme / very extreme;
example;

ORA [3]

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(ii)

disease	type	carrier	caused by	symptoms
bilharzia	**WATER-BASED**	**SNAIL**	worm	weak and anaemic, kidney problems
cholera	water-borne	none	a bacterium	**DIARRHOEA, VOMITING**
MALARIA	**WATER-BRED**	Female mosquitoes	plasmodium	**HEADACHES, FEVER, VOMITING,**

All six for three marks. Four or five for two marks. Two or three for one mark.

Allow one symptom for each. [3]

5 (a) (i) 65 (accept 64–66); [1]

(ii) H.E.P., biofuels, wind, solar, geothermal (ignore nuclear but no mark if any other non-alternative named in the list); [1]

(iii) tidal / wave; [1]

(b) (i) iron ore;
manufacture of any relevant product;

copper;
wire / eq.;

lead;
roofs / batteries;

aluminium / bauxite;
named product;

N, P or K;
fertiliser;

gold / silver;
jewelry etc.;

diamonds;
jewelry or cutting;
named rock;
as appropriate (e.g. limestone for blast furnace / cement / sand(stone for glass) / desulfurisation;;

One mark for two appropriate minerals and one mark for each use. [3]

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(ii) 2044; [1]

(iii) reuse;
recycling;
use of alternatives;
more efficient use;
quota / eq.; [3]

6 (a) (i) B, A, C

All three correct for two marks one or two correct for one mark. [2]

(ii) lichens / mosses / pioneer plants;
can colonise rock / bare surfaces / don't need soil;
ref. to soil created / described;
soil improves;
gets more, humus / water / minerals / nutrients;
allowing small plants / named plants to root / grow;
tall plants / shrubs / bushes / eq. grow;
ref. to competition between named types of plants e.g. taller / shorter;
for water / light / nutrients; [4]

(b) ref. herbicides;
intercropping;
biological control or described;
physical removing of weeds;
use crops which are (faster growing / outcompete the weeds / resistant to herbicides of the weeds);

any development, such as named example; [4]

[Total: 60]

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