

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

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<sub>2</sub> 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<sub>2</sub>) / nitrogen oxides / NO<sub>x</sub>; [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;  
NO<sub>x</sub>;  
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]

(ii)

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

*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]**