

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2014 series

0680 ENVIRONMENTAL MANAGEMENT

0680/13

Paper 1, maximum raw mark 60

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- 1 (a) (i) taiga extreme N, not S;
tropical rainforest equatorial;
monsoon tropics away from equator; [3]
- (ii) conical; branches lower down; needle leaves; thick bark; [2]
- (b) (i) clearance for fuel-wood;
subsistence and cash crop farming;
settlement;
timber extraction;
grazing; [2]
- (ii) agro-forestry;
community forestry;
reforestation;
sustainable harvesting of hardwoods;
fuel-wood planting;
genetic engineering; [3]
- 2 (a) (i) wave; [1]
- (ii) water enters tube / eq. and pushes air out;
turns turbine;
sucks air out;
turns turbine; [3]
- (iii) advantages:
renewable;
little / no pollution;
uses of lake;
- disadvantages:
expensive;
loss of habitat / flooding / eq.;
silting up;
methane emissions from reservoirs;
possible dam failure;
increase water borne disease risks;
earthquakes; [4]
- (b) the source of energy is not used up;
so will be available for future generations; [2]

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- 3 (a) (i) from top:
 boilers / other;
 waste incineration;
 metal industries;
 manufacturing;
 boilers / other;
 leaded aviation gas;

All six for two marks, three – five for one mark, zero – two for zero marks. [2]
- (ii) falls throughout;
 except 1994 until 1995;
 any development such as manipulation;
 reduction in use of leaded petrol;
 other feasible environmental protection suggestion;
Allow numerical answers. [4]
- (b) (i) when inverted pollutants cannot escape;
 because hot air stops cold air below it from rising;
 so pollutants accumulate near ground;
 tend to happen in areas where lots of cars / eq.; [2]
- (ii) any ref. to increased use of public transport;
 ref. to insulation or other domestic energy saving measures;
 car sharing / number plate rota; [2]
- 4 (a) (i) top warm, bottom cold; [1]
- (ii) cold currents are found where rainfall is low on land;
 places adjacent to warm currents warmer in winter;
 examples from the maps to exemplify; [2]
- (iii) ref. upwelling;
 of cold water;
 rich in minerals / named mineral(s);
 cause great plant / phytoplankton growth;
 fish use these as food; [3]
- (b) ref. to human population growth;
 need for food;
 ref. to greed / eq.;
 desire for money;
 ref. modern technology;
 any relevant detail; [4]

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- 5 (a) (i) it is $100 - (25 + 45 + 25)$;
= 5%; [1]
- (ii) water; [1]
- (iii) irrigation;
development;

addition of fertilisers;
development; [4]
- (b) addition of humus / organic matter to soils;
mixed cropping;
crop rotation;
tree planting;
land drainage;
bunds; [4]
- 6 (a) (i) *reservoir*:

carbon dioxide gas;
nitrogen gas;

fixed by:

bacteria;

in living things:

starch;

removed by:

respiration;
denitrification;

All six for three marks, four – five for two marks, two – three for one mark, zero – one for zero marks. [3]
- (ii) A light;
B heat; [2]

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- (b) (i) wetland drainage:
 loss of fish/aquatic animals;
 as food for humans/other animals;
 loss of their ability to clean water;
 increased floods;
 loss as site for recreation;

deforestation:
 biodiversity loss;
 source of food/raw materials;
 they protect soils;
 carbon sinks;

[4]

- (ii) sustainable harvesting of wild plant and animal species/national parks/wildlife reserves/
 world biosphere reserves/gene banks [1]

[Total: 60]