

MARK SCHEME for the May/June 2014 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 May/June 2014 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

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- 1 (a) (i) population all one species;
community more than one;
community different species interact;
example to illustrate; [3]
- (ii) gentle rise;
followed by steeper rise;
flat at top;
Two components for one mark, all three for two marks. [2]
- (b) (i) demographic transition model; [1]
- (ii) death rate declines;
due to better medicine / food;
then birth rate birth rate declines in stage 3;
due to rise of birth control / better educated women; [4]
- 2 (a) (i) CFCs;
nitrogen; [2]
- (ii) warm air sits over cold air;
no circulation (stated or shown by suitable arrows);
fumes / smoke trapped; [2]
- (iii) people ill, do not go to work / decline in tourism / cost of health care; [1]
- (b) (i) SO₂/NO_x;
when fuels burnt / volcanoes erupt;
dissolve in / mix with / react with / combine with water (vapour) / rain;
falls as rain with low pH / which is named acid; [3]
- (ii) the gases can be moved long distances / atmosphere is not a barrier to gas movement;
by winds; [2]
- 3 (a) (i) continental drift / plate movement;
(plates move) apart;
due to magma (oozing out through cracks) / sea-floor spreading;
dragging / pulling plates apart;
ref. convection currents; [3]
- (ii) constructive / divergent; [1]
- (b) (i) volcano predictable / people can be (warned / evacuated);
volcano localised;
volcanoes usually remote / low population areas;
volcano happens slowly, time to get out of its way;
earthquakes can be followed by tsunamis;
Accept converse arguments. [3]

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- (ii) buildings stronger / earthquake resistant;
design detail;
coastal protection (against tsunamis);
further detail;
provide stockpile of food / water;
ref. education / drills / training;
(fund) work on predictive technology;
ref. better communications;
ref. shut down of gas supplies; [3]
- 4 (a) (i) N and S pole;
across both tropics;
often on west coasts;
named country / region; [2]
- (ii) desalination;
details;; (distillation, reverse osmosis)

aquifers;
details;; (stored underground water, wells dug, pumping)

buy it in;
details;; (cost, bottled, pipeline, iceberg) [3]
- (b) (i) achieved rate down to 11%;
target was 11.5%;
achieved 3 years early / by better than half;

alternative: those with access in 2012 gone up 12% [3]
- (ii) typhoid and cholera;
because caused by bacteria / microbes in water / water-borne; [2]
- 5 (a) (i) mountains subject to heavy rain;
landslides;
lack of trees causes soil erosion;
decreased interception of water;
decreased uptake of water by roots;
eroded soil silts up Bangladesh rivers;
lack of trees allows more water from mountains down Bangladesh rivers / increased runoff;
lead to flooding in Bangladesh;
ref. to any relevant economic consequence; [3]
- (ii) reforestation;
selective logging;
dams / levees / flood water storage / relief channels / drainage;
ref. soil erosion mediation measures; [3]

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(b) (i) wood;
fuel-wood / furniture / eq. / paper;

forest plants;
medicines etc.;

fruits / nuts;
food; [2]

(ii) ref. CO₂ absorption;
in photosynthesis;
reducing CO₂;

ref. O₂ release;
in photosynthesis;
increasing O₂; [2]

6 (a) (i) B
A
C
Three correct for two marks, one or two correct for one mark. [2]

(ii) long / widespread / deep roots;
to reach water deep down / over wide area;

succulence in stems / leaves (fleshy / big stems);
to store water;

waxy cuticle;
to conserve water;

stomata in pits;
to conserve water;

stomata closed in day;
to conserve water / decrease transpiration;

spines;
to stop animals taking water;

reduced leaves;
reduces transpiration;

green stems;
lost leaves reduces water loss;

short life cycle;
so reproduced when water is available; [4]

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(b) (i) too cold:
to grow crops / farm;
heat houses / expensive; [2]

(ii) dry:
lack of water for plant growth (crops / pastures);
irrigation unfeasible / difficult / expensive;
ref. salination linked to irrigation;

hot:
increases water loss from plants; [2]

[Total: 60]