

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2015 series

0680 ENVIRONMENTAL MANAGEMENT

0680/11

Paper 1, maximum raw mark 60

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- 1 (a) nitrogen
oxygen
carbon dioxide
- Three correct for two marks. One or two correct for one mark.* [2]
- (b) (i) correct plot (with error margin of half a square above);
burning gas and burning oil correct in the key;
key of plot matches the plot chosen; [3]
- (ii) deforestation / eq.;
reduces trees taking in carbon dioxide / photosynthesis;
OR
urbanisation / increase in use of machines in farming;
carbon dioxide-emitting activities described such as burning of fossil fuels;
- Allow other correct examples.* [2]
- (iii) the gas traps additional heat radiating from Earth's surface / causes greenhouse effect / this causes warming of atmosphere / global warming;
which might lead to climate change;
- Up to three correct consequence(s) of climate change for the environment:
e.g. sea level rise; ice cap melting; weather pattern changes;* [3]
- 2 (a) (i) photosynthesis
water
light / eq.
- Three correct for two marks. Two or one correct for one mark.* [2]
- (ii) fertilisers:
it adds nutrients / minerals / a named mineral to soil (to increase growth);
- pesticides:
to remove pests, which eat fruit / roots / transmit disease / compete with / parasitise the crop; [2]
- (b) $0.05 / 1.75 \times 100$;
 $= 2.9 / 2.86\%$; [2]

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(c) grower:
a fair price means grower can receive more money* / a sensible suggestion as to what money might do for them if more money not stated / having money in advance means grower can fund next year's crop / guaranteed market for coffee;

buyer:
direct buying means guaranteed / stable source of coffee / gives the buyer an edge when selling / protected from coffee price fluctuations;

shop owner:
more people will buy this coffee / will sell more of this coffee / improves reputation / make more money (from higher volume of sales)*;

customer:
feels good / doing duty, knowing that a person is getting a fair price;

*Allow * only once.* [4]

3 (a) (i) explanation in terms of:

(right angles / vertically at the Equator) / oblique at the poles;
direct / concentrated rays at the Equator / indirect at poles;
less area at the Equator than poles;
less atmosphere to go through at the Equator than poles;
ref. to no sunlight at poles for long periods; [2]

(ii) the temperature is expected to be consistent, but it actually varies from A to B;
the land is colder than expected / the sea is warmer than expected;
warmer in (north) Atlantic / or Pacific than expected;
colder in N America / SE Eurasia than expected / warmer in NW Eurasia than expected;
ref. (ocean) currents;
correct ref. to the different heat absorption of land vs. water / eq.;

Max. two marks for description or for explanations. [3]

(b) (i) wind; tidal; wave; HEP; geothermal; biomass; nuclear; [2]

(ii) (local) solar panels;
(local) wind turbines;
on houses or other correct ref. to where installed;
(fossil-fuel powered) generator;
with government cash subsidy / grant / government pay for; [3]

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- 4 (a) near coasts/eq.;
- (mainly) above and below the tropics/above Tropic of Cancer and below the Equator;
- temperate waters;
- bigger area north of the Equator/more fisheries south of the Equator/in Pacific Ocean;
- ref. to cold currents/high oxygen/ref. to meeting of warm and cold currents;
- ref. upwelling of nutrients;
- ref. continental shelf;
- ref. lack of thermocline/eq.;
- ref. shallow water;
- ref. light penetration;
- ref. photosynthesis;
- ref. plankton;
- ref. where humans are/important part of income/way of life;

Allow one mark for a comprehensive list of where they all are/only one at the Equator. [4]

- (b) (i) using a resource in way which does not stop it being used in the future/development that meets the needs of the present without compromising the ability of future generations to meet their own needs; [1]

- (ii) description of how close data is to 70%/large percentage/agree/disagree qualified, e.g., to a great extent/strongly/because not quite what book says;
- data is 60 (overfished) + 6 (depleted) = 66% is unsustainable;

ORA (2 + 9 + 23 = 34% is sustainable) [2]

- (iii) net types;
- size;
- mesh size;
- quotas;
- restricted area;
- closed/restricted season;
- conservation laws/monitoring/licence;
- education of fishermen about conservation;

Allow another mark for developing any point. [3]

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- 5 (a) (i) north / south but slower than the Eurasian plate / towards the Eurasian plate; [1]
- (ii) plates (always) move;
(collisions of plate) cause a build up of pressure;
due to friction / eq.;
resulting in shaking; [2]
- (b) (i) 6 to 50 000 / 49 994; [1]
- (ii) time of day it occurs;
location, qualified (e.g. different population density);
might be followed by tsunami;

preparedness / earthquake-resistant buildings / what to do in an earthquake;
Allow up to two examples for two marks. [3]
- (c) volcanoes are:
isolated;
often allow more time to escape;
predictable / can evacuate;
localised;

ORA for earthquakes. [3]
- 6 (a) (i) climatic:
temperature / humidity / wind / light;

soil:
salinity / water / pH / nutrients;

non-human:
predators / producers / consumers / competitors;

12 items correct for four marks. 9–11 items correct for three marks. 6–8 items correct for two marks. 3–5 items correct items for one mark. [4]
- (ii) *One mark per example.*
e.g. deforestation; farming; polluting; draining; burning of fossil fuels; etc. [2]

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(b) (i) cause:
e.g. removal of vegetation / overgrazing / over-cultivation / clearance of slopes / poor irrigation;

explanation:
e.g. soil has no cover / no roots to bind soil / no barrier to wind / increases run-off / other relevant explanation; [2]

(ii) tree planting;
terracing;
contour ploughing;
wind breaks; etc.

description of how this helps for the second mark; [2]

[Total: 60]