

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2014 series

0680 ENVIRONMENTAL MANAGEMENT

0680/23

Paper 2, maximum raw mark 80

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Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

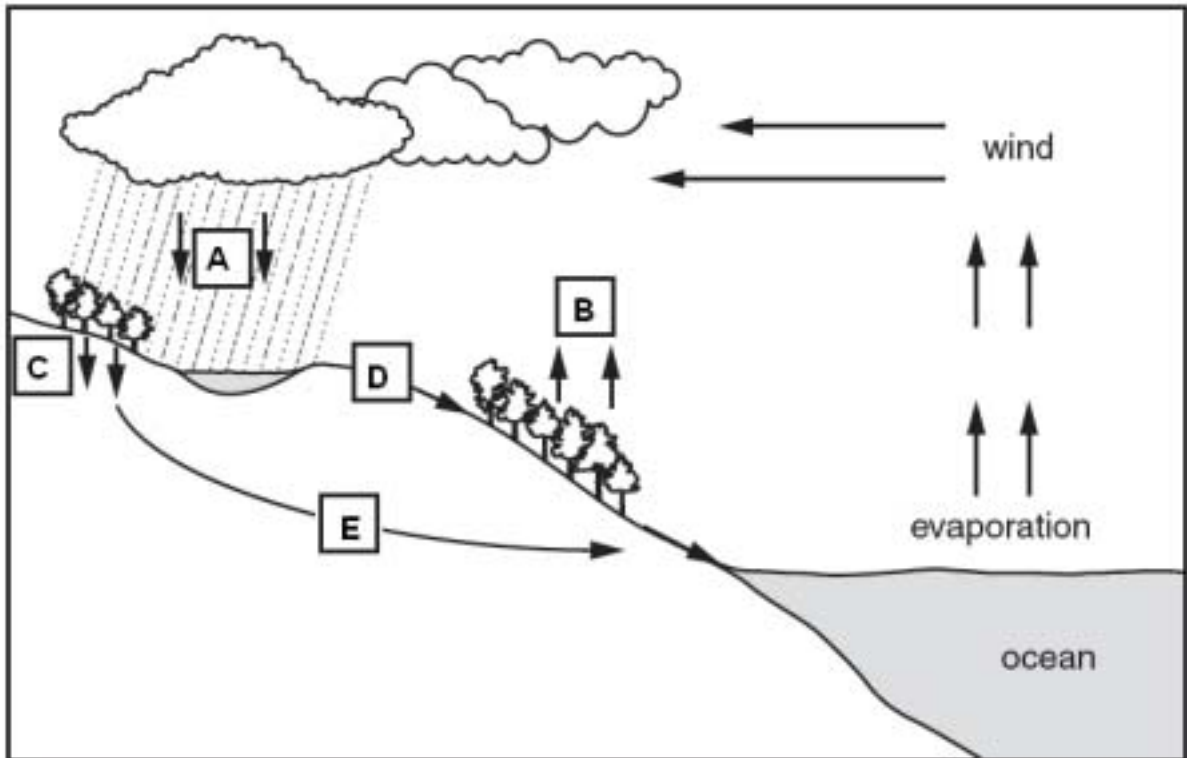
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1 (a)



Credit one mark per correct box.

[4]

(b) (i) Four correct bars for two marks.
Two or three correct bars for one mark.

[2]

(ii) 89 000 – 20 000;
69 000 km²;

[2]

(iii) attempt to reduce/prevent soil erosion/increase soil fertility;
attempt to reduce/prevent desertification;
to provide more amenity/tourism;
government policy/laws, etc.;
as a conservation initiative to increase biodiversity;
to help reduce global warming;
responding to need for more wood products, e.g. paper;

[2]

(c) (i) Vietnam; (*Accept Thailand.*)

[1]

(ii) Cambodia;

[1]

(iii) use of wood for fuel/building/furniture;
clearing of land for agriculture/mining/transport/settlement;

[2]

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- (d) (i) more run-off;
due to reduced interception;
reduced water take-up by plants;
less infiltration;
nothing to hold soil / sediment together;
O.R.A. [3]
- (ii) sediment raises the bed of the river / reduces channel volume / raises water level;
reducing the amount of water it can hold;
water gets into river more quickly than before, so higher peak flow;
water gets into river in a larger quantity; [3]
- (iii) reduces fertility of the land / loss of minerals;
needs soil to grow crops / fodder; [1]
- (iv) terracing;
contour ploughing;
strip farming;
planting tree crops (as a barrier to water flow);
- Development mark available for each.
Max. two marks for names only.* [3]
- (e) (i) fertiliser added / excess used / is not all taken up by plants;
when it rains washed through / over soil to river; [2]
- (ii) algal bloom blocks sunlight,
so no light for photosynthesis [2]
- (iii) algae die;
respiration of bacteria / decomposition reduces oxygen levels;
reduced oxygen so fish suffocate;
food stocks decline so predators die; [2]

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- (iv) *farmers:*
 reduce use of fertilisers;
 use organic fertilisers;
 use fertilisers at the right time / conditions / controlled;
 prevent animal slurry from washing into groundwater / rivers;
 drainage channels direct run-off away from streams, etc.;

people:
 sewage should be treated, so only clean water is put into the river;
 pass laws / fine to stop untreated sewage being put into the river;
 provide better sanitation;
 remove algae;

[4]

- (f) *for clearance:*
 already food shortages;
 which may get worse due to climate change;
 loss of land to rising sea levels;
 soil erosion / exhaustion;
 people deserve to be fed (properly) / current land cannot support more people;

against clearance:
 can make better use of land we have;
 such as GM crops;
 more arable / less animals;
 need to reduce population growth;
 tropical rainforest soils are not very fertile, so a waste of time using them for farming;
 the environmental reasons, e.g. species, loss of habitats and biodiversity, etc.;

Level 3 5–6 marks

Answers the question by recognising both sides of the argument, at least two reasons for or against. Reasons are well explained.

Level 2 3–4 marks

At least two points well explained or a number of points lacking detail.

Level 1 1–2 marks

Simple statements with little or no explanation.

No response or no creditable response, 0 marks.

[6]

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- 2 (a) round Pacific ring of fire;
with details of east Asia or western Americas;
many on islands between Asia and Australia/Oceania;
a few in east Africa;
only one in (southern) Europe;
on plate boundaries;
(one in middle of) Pacific;
Central America;
coastal;
between the tropics; [4]
- (b) (i) Mount Pelée; [1]
- (ii) Philippines; [1]
- (iii) highest: ashflows
mudflows
lowest: disease; [1]
- (c) lavas are slow moving;
localised;
quite easy to avoid;
sufficient advance warning;
less people live (on the steep slopes) where lava flows fastest;
not always present; [2]
- (d) (i) risk/danger,
from breathing in or sinking into ash/soft mud;
from more volcanic activity/eruptions; [2]
- (ii) *people*:
loss of life;
loss of property/home;
loss of income/job;
less food/land for cattle grazing/agriculture;
air pollution/health effected from ash;
- economy*:
businesses destroyed/closed;
cost of evacuation/housing evacuees;
rebuilding roads/airport/port;
relocating government;
cost of importing food/goods;
tourists reduce;
- Max. four marks on either people or economy. One mark per point but credit development.* [5]

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- (iii) axes correctly orientated;
y axis correctly titled;
four or five points correct and joined up;;
Allow one mistake so three correct plots for one mark.
Incorrect scale loses the plot marks. [4]
- (iv) $\frac{12\,500 - 2700}{12\,500} \times 100$;
78.4%; [2]
- (v) plants/ animals/ fish killed;
leaves covered in ash so plants cannot photosynthesise;
as plants die primary consumers have no food/ ref. to food chain;
predators then lose their food supply;
animals suffocate in the ash;
birds lose nesting sites;
rivers/ seas polluted with ash;
coral reefs covered in ash so no light and die; [4]
- (e) (i) plot;
key; [2]
- (ii) Africa; [1]

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- (iii) *spread:*
 by contaminated drinking water;
 food washed / cooked in contaminated water;
 water contaminated due to poor sanitation;
 so cholera bacteria from faeces get into water;

after disasters:

- (contaminated) flood water gets into water supply / food;
 sanitation system / water supply system destroyed;
 people forced to live in camps / poor sanitation;
 so very close together / overcrowded;

[5]

Max. four marks on either spread or after disasters.

- (f) (i) mosquitoes (carry the protozoan);
 and can only lay eggs in water;
 where larvae hatch;
 and produce next generation of mosquitoes;
 which carry the infection;

[2]

Award one general mark for breed in water.

- (ii) eradicating anopheles mosquitoes – spraying pesticides;
 stopping the breeding process – getting rid of stagnant water for breeding;
 preventing infection – use of mosquito nets, drugs;;
 education – linked to either of the latter two;

[4]

[Total: 80]