

**MARK SCHEME for the May/June 2009 question paper
for the guidance of teachers**

0680 ENVIRONMENTAL MANAGEMENT

0680/01

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 must be read in conjunction with the question papers and the report on the examination.

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- 1 (a) (i) air/atmosphere/at the top
- (ii) 1 – decay/decomposition/respiration
 2 – respiration
 3 – photosynthesis
 4 – death 4/3 = 2, 1/2 = 1 [2]
- (iii) more gain of carbon dioxide to atmosphere:
 any 2
 burning of fossil fuels;
 car use/power station use/eq.;;
 less loss from atmosphere:
 deforestation/eq.;;
 less photosynthesis; [3]
- (b) (i) carbon dioxide builds up/eq.;;
 carbon dioxide is greenhouse gas/causes greenhouse effect/eq.;;
 traps heat;
 makes (world) temp rise/causes global warming/eq.;; [3]
- (ii) any from;
 walk/public transport/bike/turn off lights when not in use/wash at lower temp/turn heating down/use hybrid car/high mileage car/campaign/planting trees (but not obviously commercial or large scale tree planting ventures/not replacing goods/bring pressure on authorities
 (R) points to do with laws as Q about people
 (R) afforestation on its own [1]
- 2 (a) (i) open site/away from interference;
 clear of buildings/other overhangs/avoiding runoff (eq.) from trees/roofs/eq. [2]
- (ii) empty at known time one day;
 collect and read off on scale/eq.;;
 at same time next day/regular checking;
 (A) measure daily rise for one mark; [2]
- (b) (i) no rain J/J/A;
 rain rest of year/named months
 dry season/wet season;
 months quoted; [2]
- (ii) any ref to irrigation of suitable kind/eq.;;
 AVP [1]
- (iii) addition of fertilisers/use of pesticide/herbicide/
 genetically improved varieties/rotation [1]

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- (c) appropriate crop; use
e.g.
sugar cane; biofuel;
cotton/AVP; textiles; any correct
trees; wood
legume; green manure
lavender/AVP; scent;
appropriate crop; medicine;
AVP; AVP [2]

- 3 (a) (i) A – rainfall/precipitation;
B – infiltration/percolation;
C – (evapo)transpiration;
D – evaporation; $4 = 3$, $2/3 = 2$, $1 = 1$ [3]

- (ii) any 4 from:
12, 13, 3, 15, 16, 7, 5; $3/4 = 2$, $1/2 = 1$ [2]

- (b) (i) mercury/lead/sewage/faeces/urine/heat/fertiliser/pesticides/herbicides/AVP
brain damage/correct named/death of food fish/AVP [2]

- (ii) water-based (bilharzia);
waterborne (typhoid, cholera);
waterbred (malaria)
(R) diarrhea [1]

- (iii) e.g. malaria
– oil on water; stops fly/eq. larvae
– drain; stop flies breeding;
– pesticides; kill fly/eq.
– prophylaxis/eq.; kills parasite/eq.
– repellent; stops flies biting;
– nets; stop flies biting;

bilharzia
– molluscicide/described; kills snails
– avoid entering water; (to) avoid snails

typhoid/cholera
– treat water to kill organisms causing it/eq.;

method/chlorination/eq./boiling water before use
better sewage disposal;
use well water;

also credit two methods stated [2]

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- 4 (a) (i) 34
- (ii) 60
- (iii) overfishing;
improved technology (named); how it works/AVP;
marine pollution; named one/effect;
climate change; effect on food/eq.;
increased demand; due to pop growth/eq.;
damage to habitat; caused by trawling methods;
commercialisation/eq.; factory ships/eq.;
AVP
any 2 two named explained [4]
- (b) (i) larger mesh;
quotas;
restricted seasons;
restricted range/zones;
fish types/species/size restricted;
smaller net;
fish farming;
fish taxes;
AVP; [2]
- (ii) young fish caught, not kept but dead on return;
can't monitor;
law breaking;
hunger;
poverty;
demand irresistible;
AVP [2]

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- 5 (a) (i) $100 - (3 + 3 + 1 + 60) = 33\%$
(2 for right answer even if no working)
- (ii) growing what you and your family need to eat for the year;
no saleable surplus [2]
- (b) (i) methane output from cattle;
warming/climate change, OWTTE;
water pollution from cattle faeces;
killing' rivers/streams/ ponds etc.;
addition of faeces/eq.;
improves soil; [2]
- (ii) replanting/afforestation/quotas/selective logging/wood substitutes/AVP
do not harvest near rivers etc. [1]
- (iii) ban it/laws/make it illegal;
enforcement agency/fines;
choose moving eqpt. for low impact or ground pressure (caterpillars etc.);
build roads as narrow as possible;
selective logging;
educate consumers;
AVP [3]
- 6 (a) (i) Iron ore: Asia
copper: S. America
tin: Asia; [3]
- (ii) nitrate/phosphate/potash; fertiliser
sulphur; making acids;
salt; food industry
gem stone type minerals; jewellery/fashion;
AVP [2]
- (b) (i) physical injury/lung disease/silicosis/low life expectancy/death/
carbon dioxide poisoning/AVP; [1]
- (ii) dust pollution/noise pollution/habitat destruction/loss of biodiversity (eq.)/AVP [1]
- (c) reclamation; landfill; planting; appropriate species; fertilising; landscaping;
in filling; lakes; habitat creation; [3]