

**MARK SCHEME for the October/November 2006 question paper**

**0680 ENVIRONMENTAL MANAGEMENT**

**0680/01** Paper 1, maximum raw mark 60

This mark scheme is published as an aid to teachers and students, 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.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

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

The grade thresholds for various grades are published in the report on the examination for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses.

- CIE will not enter into discussions or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the October/November 2006 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

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- 1 (a) (i) because might be (bitten) by insect (owtte);  
stung;  
which transmits disease (or named)
- (ii) apply repellent;  
stop insects (owtte) landing/biting
- OR
- take drugs (owtte);  
to kill disease (organisms);  
use of mosquito net;  
to stop biting/stinging [2]
- (b) (i) disease carried (by flies)/from latrine (e.g. not malaria);  
transferred on to food;  
unpleasant (or e.g. (smell));  
disease (or e.g.) when drinking water any [2]
- (ii) treat water;  
improve latrine (vent);  
flushing;  
install sewage disposal;  
pipe away/in;  
health campaign;  
boil water;  
sink well;  
so water cleaner;  
Blair toilet [2]
- (ii) more tourists;  
more money;  
better water for locals;  
less illness;  
more jobs [2]
- 2 (a) (i) Plate boundaries/margins (owtte) [1]
- (ii) Mainly under the sea/oceans;  
Atlantic;  
far east/Indonesia;  
Rift valley/East Africa;  
ring of fire;coastal;  
(A) significant absences (e.g. S America)  
® just on plate boundaries again [2]
- (b) (i) Look for idea that HIGH pop leads to likely greater effect (vice versa);  
Better buildings, lower effect (vv)  
Bigger buildings/more easily damaged/more people  
Urban more effect than rural (vv)  
Higher Richter more effect (vv)  
rural less good buildings  
(in each case an extra mark for reason if developed well/further, so 2 + reasons can give 4) [4]
- (ii) food aid;  
sniffer dogs;  
medical supplies;  
water;  
better buildings;  
drills;  
food stockpile in houses;  
where to stand info etc.;  
monitoring;  
early warning:

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- 3 (a) (i)  $5 \pm 0.5$
- (ii)  $5 \pm 0.6$
- (b) (i) pesticide/insecticide/named ® weedkiller/e.g. fertilizer/(A) minerals/nutrient/named correct [2]
- (ii) ref food chain effect ;  
kills top link/carnivores/pred birds (owtte);  
upset web  
direct poisoning of beneficial spp;  
pests evolve resistance
- OR
- Run off;  
into water;  
eutrophication (named);  
growth of algae stimulated;  
death of algae;  
bacterial decomposition;  
use of oxygen (but ® if linked to algae doing it);  
fish etc. death [3]
- (iii) one living thing used to control (pop/nos) of another;  
  
e.g. introduce/measures/actions to encourage/owtte;  
pred/parasite/disease/specific e.g.;  
to eat/infect/parasitise (pest);  
e.g. (must state both pest and control agent) any [3]
- 4 (a) less minerals in warm water/deep water (owtte) not upwelling/minerals not coming up;  
plants (algae) do not grow so well;  
anchovy have less food owtte;  
so migrate/die/popns do not grow;  
less oxygen;  
in warm water/because algae not making it/so much;  
fish cannot survive (owtte) [4]
- (b) (i) poison/kills/damages fish (toxic);  
clogs gills;  
lowers oxygen uptake;  
blocks light for algae;  
blocks oxygen from dissolving;  
reduces/stops photosynthesis;  
food chain effects;  
less plants/less food;  
fish difficult to clean/sell;  
loss of money;  
seabirds eat less fish; any [4]
- (ii) detergent;  
booms etc.;  
bioremediation/digestion of oil, bacteria;  
clean birds;  
clean beaches;  
burn oil;  
® just ' machine' [2]

5 (a) 36;52  
 OR the sum of the two (88), correct nos. credited for 2, sum ignored 2 marks  
 52/36 for 1 mark

- (b) (i) particles;  
 asthma/breathing problems;  
 acid rain;  
 (plus one for relevant effect of acid rain);  
 lead;  
 brain damage in children;  
 carbon dioxide;  
 global warming;  
 carbon monoxide;  
 effect on haemoglobin/reduce oxygen carrying

any [4]

Exhaust component	Effect(s)	Consequence(s)	Knock on effect
Carbon dioxide	Global warming	Flooding (etc.)	Displacement/deaths/loss of valuable land/etc.
NOX/SO <sub>2</sub>	Acid rain	Trees die/buildings/breathing probs/cataract/eq	Habitat loss
Particles	smog	Breathing probs	Asthma/Death/illness/lost man/days etc.
Lead	Brain	Low IQ	Cost to state/parents
Carbon monoxide	Reduces oxygen carrying	Illness	Cost/death

- (ii) use public transport;  
 car sharing;  
 keep car in good order/service;  
 catalytic converter;  
 walk;  
 cycle;  
 electric car;  
 fuel economy;  
 diesel;  
 unleaded;  
 biofuels/ethanol/methane;  
 fuel cell;  
 car rationing;  
 congestion charge;

any [4]

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- 6 (a) (i) most in southern hemisphere owtte;  
 most in Africa;  
 least in Australia;  
 in tropics/eq;  
 only in *northern* Australia;  
 AVP [2]
- (ii) **nomadic pastoralism**
- over grazing;  
 soil erosion;  
 desertification;  
 decreased biodiversity/eq;  
 ® habitat destruction
- OR
- tourism**
- vehicle use, pollution/erosion;  
 habitat destruction for buildings (hotels etc.);  
 pollution from people (noise/litter/sewage);  
 bring disease to locals;  
 trampling effects/erosion; [3]
- (b) (i) improved health care; dev/e.g. ;  
 water supply;dev;  
 sewage treatment;  
 agricultural revolution; more food [2]
- ® increased birth rate/decreased death rate\arguments this is cause not reason
- (ii) (improve) education about family planning;  
 empower/educate/give jobs to/eq/women  
 supply contraception;  
 provide old age pension;  
 incentives (radios);  
 laws (e.g. one child);  
 reduce need for children; method (e.g. less infant mortality due to .../less labour intensive  
 agricultural methods etc. [3]

OWTTE – or words to that effect  
 A – Accept  
 ® – Reject  
 AVP – Alternative Valid Points