

**MARK SCHEME for the October/November 2010 question paper
for the guidance of teachers**

0680 ENVIRONMENTAL MANAGEMENT

0680/13

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) C; [3]
- (ii) A peat;
B time and pressure;
C time and pressure; [3]
- (b) (i) **miners**
collapse of tunnel;
fire due to gases from coal;
poisoning from coal gases/silicosis;
breathing problems;
flooding; [max 2]
- environment**
spoil pollutes ground and water around mine;
carbon dioxide/owtte when burnt;
landscape destruction/visual pollution (open cast); [max 2]
- (b) (ii) wind;
hep;
geothermal;
nuclear;
tidal;
wave;
biofuels; [max 2]
- 2 (a) (i) N and S of tropics/equator;
Africa;
S Asia;
W S America;
AVP (relevant countries named); [max 2]
- (ii) sun;
vapour;
evaporation;
condenses;
clouds;
rain;
snow (owtte);
sea/ocean; half each/round down [max 4]
- (b) (i) Peru [1]
- (ii) Peru [1]
- (iii) quotas/seasons/net size;
relevant explanation; [2]

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- 3 (a) (i) (abs = 18) + (reflection = 32) = 50%;
earth abs = 100–50 % = 50% ;
- (ii) carbon dioxide;
methane;
water vapour; [max 2]
- (b) (i) diagram showing IR radiation leaving Earth surface;
but being scattered or in some way not allowed to leave by gh gases; [2]
- (ii) walk/cycle/reduce car use;
public transport/take more people for less money per head;
car sharing;
use biofuels in cars;
carbon neutral (idea); [4]
- 4 (a) (i) A: ammonia/ammonium;
B: nitrate; [2]
- (ii) carbon dioxide;
water;
any relevant minerals other than N;; [max 2]
- (b) (i) fertilisers – get into water/rivers/streams;
cause algal growth;
algae die;
rot and use up oxygen;
fish suffocate;
eutrophication; [max 2]
- pesticides – get into food chains;
get amplified (owtte);
kill or harm those at top of chain;
kills harmless/valuable species;
(idea of poisoning humans for ONE) [max 2]
- (ii) biological control;
example given;
principle described (e.g. predator/parasite/disease introduced); [max 2]

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- 5 (a) (i) 500–600 million;
- (ii) $12000/300; = 40;$
- (b) (i) SOIL: loss/erosion/depletion of nutrients/fertility lost;
WATER: polluted/named pollutant/increasing scarcity;
VEGETATION: loss/removal/killing; [3]
- (ii) better educated women; have less children;
pension schemes; mean think do not need so many children for old age;
decreased infant mortality; means do not have more to insure against death
up to 2 for each [4]
- 6 (a) (i) C;
A;
B; [3]
- (ii) weathering; [1]
- (b) (i) (water) erosion; [1]
- (ii) A: tree planting/afforestation;
B: terracing;
C: contour ploughing;
D: shelter belt; 1/2 each round down [2]
- (iii) removal of trees stops them taking in CO₂;
in photosynthesis;
farm machinery;
gives out CO₂ burning fossil fuels; [max 3]