UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2010 question paper

for the guidance of teachers

0680 ENVIRONMENTAL MANAGEMENT

0680/12 Paper 12, maximum raw mark 60

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UNIVERSITY of CAMBRIDGE
International Examinations

1 (a) (i)
magma chamber D
lava E
crater C
ash B [2]

(ii) 1. B
2. E [2]

(b) (i) any three from:
breathing related problems (suffocation / poisoning);
physical if living at top (buried / hit etc.);
caught by lava flow, incinerated;
floods / mud slides due to ice / snow melt;
consequent collapse of buildings in context [3]

reject knock on effects about food supply

(ii) any two from:
earthquakes: no warning / ora;
sudden / quick / happens all at once / ora;
widespread / ora;
volcano: more often very remote / ora; [2]
(ora – or reverse argument)

(iii) better stronger buildings / any aspect of improved after care / evacuation of prone areas; [1]

2 (a) (i)
domestic C, E, G, F
agricultural G, A, B
industrial D, E [3]

(ii) BOX 1 growth / bloom (eq) of algae – accept plants grow;
BOX 2 algae die / give organic matter;
BOX 3 uses up oxygen / oxygen levels fall / no oxygen; [3]

(b) detergent substitutes;
sewage treatment;
regulation;
education;
regulate fertiliser addition;
reduction of acid rain causing gases; [4]

either four ideas stated or any developed for another mark in each case

reject answer which just talk about **not** doing things like use fertiliser, pesticides, farm near rivers
reject just prevent without a how

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3 (a) (i) numbers / variety of species / types of plants, animals, living things eq;
variety of ecosystems / habitats;
genetic variety; [2]

(ii) wild strains of cultivated species contain genes;
which might give drought resistance;
could be bred into cultivated ones;
genetically engineered into cultivated ones;
call internationally for strains already available; [2]

(b) (i) any two from:
physical destruction by building / roads;
(increased) pollution (must be qualified);
trampling owtte;
possible degradation of habitats / wildlife for tourist entertainment; [2]

(ii) environment:
fees charged for conservation / eq;
(possibility / existence of ecotourism encouraged) habitat conservation;
local people:
money from tourists to locals;
money to local amenities e.g. hospitals;
provides jobs for locals; [2]

(c) any two from:
always replant after felling;
selective logging;
laws / checks on loggers; [2]

4 (a) (i) soil: water, minerals;
atmosphere: carbon dioxide; [2]

ignore water in atmosphere box (i.e. still award carbon dioxide mark if water is there too)

(ii) As N goes up, growth goes up / they are directly proportional / eq;
then levels off / reaches optimum / peak;
manipulation of figures – reject just quoting figures; [2]

(b) (i)

overcultivation	E
natural hazards	B
more people	A
desertification	F
deforestation	D
overgrazing	C

½ each, round down [3]

(ii) terracing; developed;
contour ploughing; developed;
wind breaks / shelter belts; developed;
afforestation; developed;
add manure / mulch / organic material;
leave fallow / give time to recover;

allow any three ideas for 3 or any development of any of the points for up to 3 [3]

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5 **(a)** **(i)** coastal;
(nearly all) N Hemisphere; [2]

(ii) shallow;
(so) plenty of light;
plenty of nutrients;
so plenty phyto- / zooplankton / food (for fish);
(because of winter) sea stirring / mixing;
reject upwelling [2]

(iii) upwelling / convection currents;
brings plenty of nutrients; [2]

(iv) any two from:
El Nino occur;
(so) current which causes upwelling reverses;
water warmer;
less oxygen;
less nutrient;
fish die;
algae / plankton grow less well;
fish starve; [2]

(b) demand exceeds supply / hunger / greed / AVP / any modern technology point;
laws qualified / quotas / net size / AVP; [2]

6 **(a)** 20.97 % (by difference (100 – [78 + 1 + 0.03]), (accept 21 % as fact);
carbon dioxide used in photosynthesis / plant food making / natural greenhouse effect / provides insulation idea;
water needed for plant food making / photosynthesis / forms rain / irrigation / avp;
ozone provides protection from UV / harmful rays from sun; [4]

(b) **(i)** 1. burning fossil fuels, in any sensible context / deforestation / afforestation;
2. afforestation / deforestation / recycling / CFC destroying ozone;
3. using fridges, air conditioning, aerosols / growing rice / keeping cattle / any acid rain gas producing activity; [3]

(ii) carbon dioxide [1]

(c) best because more wind / eq;
less controversy because less intrusive, thus fewer complaints / out of sight out of mind / avp; [2]

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