UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2011 question paper for the guidance of teachers

0680 ENVIRONMENTAL MANAGEMENT

0680/11 Paper 1, maximum raw mark 60

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The following abbreviations have been used:

/	or
;	end of marking point
®	reject
OWTTE	or words to that effect
AVP	alternative valid point
ecf	error carried forward
qual	qualified, further explanation given
ORA	or reverse argument
eq	equivalent

1 **(a)** cooling A;
melting B;
heat and pressure D;
weathering and erosion C;
compaction and cementation E;
(5:3 3/4:2 1/2:1) [3]

(b) **(i)** low value;
heavy / bulky;
expensive to transport;
cheaper (unqualified) for one mark;
takes less time (unqualified);
(any two) [2]

(ii) limestone / chalk / shale / sandstone / clay / AVP;
® sand
appropriate use; [2]

(iii) addition of top soil;
fertilisers / eq;
plantings; [3]

[Total: 10]

2 **(a)** **(i)** 300 (± 10);
(with or without units) [1]

(ii) 1900–1940; [1]

(iii) because burning it (owtte) started later;
found later;
harder to acquire / technology more advanced idea;
more expensive to use owtte;
(any two) [2]

(iv) cement; [1]

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(b) (i) correct plotting; [1]

(ii) biomass; [1]

(iii) Disadvantages: (max 2)
SOLAR
expensive;
qualified (e.g. 33 cents more OR 17.5 x more);
not always available;
GEOTHERMAL
not widely available;

Advantages: (any 3)
non-polluting / contaminating; (once for either / both);
correctly qualified (once for either / both);
renewable (once for either / both)
SOLAR
widely available;
GEOTHERMAL
non-polluting;
qualified (once only);
(relatively) cheap; [3]

[Total: 10]

3 (a) (i) oxygen AND carbon dioxide; [1]

(ii) traps heat / IR / long wave / eq (® UV);
trying to leave the Earth / or implied;
® from sun;
(any two) [2]

(iii) 14%;
bar chart plot (ecf); [2]

(b) (i) transport / eq is big creator of emissions;
individual vehicles mean much more emission / ORA;
than using public transport / buses;
ref burn less fossil fuels;
ref daily trips to school / work;
(any three) [3]

(ii) bicycle;
walk;
alt fuels (only one no matter how much detail);
hybrid cars;
switch off lights / appliances / standby idea. etc.;
insulate;
taxing / subsiding idea;
(any 2) [2]
® stop deforestation UNLESS ref to burning trees
® just use less fossil fuel unqualified

[Total: 10]

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4 (a) (i) long roots;
deep roots;
widespread roots;
waxy leaves;
small / reduced leaves ® no leaves unless linked with green stem (owtte);
spiny / eq leaves;
store water / eq;
(any two) [2]

(ii) named method (e.g (trickle) drip / sprinkler / underground / animal powered / drip sheet idea);
details (e.g straight to roots / crop / plant / method explained); [2]

(b) (i)

caused by natural factors	caused by human action
A, B, E, G, I, J, K, L	C, D, F, H

(10–12:4 / 7–9:3 / 4–6:2 / 1–3:1) [4]

(ii) evacuation;
good medical help;
food stock piles;
pumping water away;
provide shelter (qual.)
provide clean water;
AVP;
(any two) [2]

[Total: 10]

5 (a) (i)

water related disease type	**diseases(s)**
water-bred	malaria ONLY
water-borne	cholera, typhoid ONLY
water-based	bilharzia ONLY

(3:2 2/1:1) [2]

(ii) none in deserts;
none in far South / North / not above / below tropics;
none / little outside tropics / ORA / equatorial / central Africa / named relevant countries (min. 2);
more at coasts;
AVP;
(any two) [2]

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(iii) drugs AND vector eradication; [1]

(iv) EITHER
drugs:
kill parasites in blood;
which cause disease / symptoms;
reduces reservoir of parasite;
(any two)

OR
vector eradication:
kills organism / insect;
which transmits disease / owtte;
(any two) [2]

(b) loss of habitat / home for water creatures;
with e.g, fish, water birds, insects;
collapse of food web;
loss of biodiversity;
AVP;
(any three) [3]

[Total: 10]

6 (a) (i) water;
CO_2; [2]

(ii) too salty / too acidic / alkaline / pH wrong (idea) / too compacted / too thin / low oxygen / waterlogged / polluted (qualified) / low organic matter / low humus; [1]

(b) (i) a producer plants;
a herbivore nematodes / fungi;
a carnivore arthropods / birds / moles / shrews / nematodes;
a predator arthropods / birds / moles / shrews / nematodes;
(4/3:2, 1/2:1 [2]

(ii) dead plants → bacteria → protozoa → nematodes → arthropods → birds
OR dead plants → bacteria → protozoa → nematodes → arthropods → moles / shrews
OR plants → fungi → protozoa → nematodes → arthropods → birds
OR dead plants → fungi → nematodes → nematodes → arthropods → birds
OR dead plants → fungi → nematodes → nematodes → arthropods → moles / shrews
all five links correct;
arrows in correct direction, regardless of number of links; [2]

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(c) prevents soil erosion (for all);
terracing
flat platforms made on hillside; slows runoff of water; thus slowing soil erosion downhill;
OR **contour ploughing**
plough perpendicular to slope / along contours (to form ruts); which slow water runoff ; thus slowing soil erosion downhill;
OR **wind breaks**
trees / shrubs planted in rows / wall / fence / eq; to protect from; soil erosion by wind;
(any three) [3]

[Total: 10]

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