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UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2009 question paper for the guidance of teachers

0680 ENVIRONMENTAL MANAGEMENT

0680/01 Paper 1, maximum raw mark 60

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1 (a) (i) a gas in the atmosphere which absorbs (reflected) heat from earth/ idea of retains/traps sun's heat;
warming up atmosphere; [2]

(ii) carbon dioxide/ CO_2 /CO; [1]

(b) rises;
sensible figures quoted;
supported with correct figures;
but fluctuates up and down as does so;
fossil fuel burning/eq emissions account for rise;
deforestation/eq;
seasonal changes in plant uptake for fluctuations;

NOTE Max 2 for description OR explanation points [3]

(c) (i) CFC–
aerosols/fridges/air conditioning (units)/fire extinguisher; [1]

(ii) methane–
rice paddies/cattle/grazing/decomposition in landfill/pockets in crust/sea bed; [1]

(iii) CFC–
use alternatives/ban/HCFC;
methane–
give cows more digestible diet/anti 'wind' agents in food/develop rice which can grow in drier conditions;
reject references to burning [2]

2 (a) (i) plates moving towards each other (label not needed but arrows/eq to show direction are needed);
oceanic/one plate shown going over other/subduction;
one plate labelled (then other implied)
volcano shown on continental shelf (labelled or accept suitable shape);
MAX 2 if one or no labels [4]

(ii) volcanic ash/eq contains nutrients/eq OR is fertile/eq;
needed for crop/plant growth; [2]

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(b) (i) ENVIRONMENT
land covered in deposits;
air polluted/eq;
deforestation;
AVP;

HOUSES
destroyed;
burnt;
buried;
by lava;
possessions lost;

FARM
destroyed;
by burying;

TRANSPORT
roads covered/eq;
poor visibility;
cars burned;
tyres melted;
airport destroyed; [2]

(ii) ban houses near volcano (zoning);
monitor and;
warn;
evacuate;
food/water/medical aid;
training in emergency procedures;
good communications;
channelling lava;
bombing to divert; [2]

3 (a) (i) 400 million [1]

(ii) 6400 million [1]
MAX 1 if no units

(iii) death rate lower;
due to:
better medical attention;
better sanitation;
better water supply;
better food production/supply;
preventive medicine (vaccination)/ eq;
AVP;; Any 2 × 2 [4]

(b) (i) unemployment; high crime rate; war; poverty; lack of services; security;
½ each round down [2]

(ii) possibility of having better:
housing/health services/education/water supply/electricity supply/source of food/ employment; AVP [2]

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4 (a) (i) A – Humboldt/Peruvian;
B – Benguela;
C – Gulf Stream/NAD;
D – Canaries;
E – N. Atlantic Drift;
F – Labrador,
G – Brazil;
H – Mozambique; [2]

(ii) cold toward equator (or away from pole); warm from equator (towards poles); [1]

(iii) current F makes Labrador colder than UK/eq;
idea of same latitude, different climate; [2]

(b) (i) coastal winds push surface water out to sea;
this warm water is replaced by rising of colder, nutrient rich water; [2]

(ii) the coastal winds weaken/or even blow the other way;
causes evaporation;
this causes reversal in surface currents;
so warm water moves towards the coast;
fish migrate/move away;
minerals used by algae;
which feed fish;
oxygen reduced in warm water; [3]

5 (a) (i) X–light/sunlight/sun/eq;
Y–carbon dioxide;
Z–water;
accept formulae [3]

(ii) nutrients/minerals/fertilisers; [1]

(iii) poor in oxygen/air/waterlogged/eq;
too acid/alkaline;
too thin/ eroded/ compacted;
too salty/polluted;

AVP [2]

(b) (i) tree– producer; [1]
caterpillar AND birds– consumer; [1]

(ii) predation/carnivore; [1]

(iii) pollination/symbiosis; [1]

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6 (a) (i) (high sea temp), causes air above to be heated;
convection currents;
this warm air rises;
clouds form;
low pressure develops;
this sucks up more air from sea surface;
air sinks in middle;
wind speeds increase;
spiral winds; [3]

(ii) Y; [1]

(b) (i) spread of malaria/cholera/other water related disease/breathing problems;

(ii) total destruction of (any sensible aspect of infrastructure)/crops/livestock/vegetation; [2]

(c) (i) period of dry weather/low or no rainfall;
lasting longer than expected/where such weather not the norm; [2]

(ii) dam building to conserve water/storing water/irrigation;
plant trees;
improve soil with compost;
drought resistant strains;
desalination plant; [2]

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