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Cambridge International General Certificate of Secondary Education

MARK SCHEME for the May/June 2015 series

0680 ENVIRONMENTAL MANAGEMENT

0680/12 Paper 1, maximum raw mark 60

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1 (a) (i) number / variety of animals and plants / types of living organisms / species;
variety of habitats / niches / ecosystems;
genetic variety; [2]

(ii) ref. to between (most in) tropics / on Equator / ORA;
on coasts;
ref. to correct proportions on different continents around the world, e.g. (most South America, least Europe, most Southern Asia, not in Antarctica / S pole (not poles);

ref. to specific places correctly and specifically described, e.g. Brazil / (central / western) south America / Far east / Malaysia / southeast Asia / (island off east coast of Africa / Madagascar) / central America / west coast of North America / south west Africa / east coast of India / south west coast of (Australia / Oceania) / southern Europe;; [3]

(b) (i) ref. genetic resource;
for crops / farm animals / etc.;
ref. medicines / drugs;
aesthetic argument;
duty of care argument;
economic impact / tourism; [2]

(ii) sustainable harvesting of wild plant and animal species;
ref. indigenous peoples;
ref. taking less than or no more than equal to the surplus produced within the wild population over time;
ref. allowing reproduction at suitable rate;

national parks / wildlife reserves / world biosphere reserves / eq.;
ref. cessation of damaging activities, e.g. logging / deforestation / drainage of land / damming / poaching;
ref. penalties punishments / laws;
ref. access to public;
ref. education of public;
tourist codes of conduct / ecotourism or described;
ref. structure (core / buffer / transition zones);
international recognition and funding;
co-operation of local people;
allowing scientific research;

gene banks;
seed banks;
sperm banks;
freezing;
zoo / breeding programmes; [3]

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2 (a) (i) geothermal; [1]

(ii) hot rocks;
turn water to steam;
this turns / moves turbine; [3]

(iii) wind / H.E.P. / wave / solar;;
Accept sun, tidal, biomass (fuel) or nuclear.

ECF geothermal if not given above. [2]

(b) (i) a source of energy which is not a fossil fuel / (overall) does not emit carbon dioxide when used / renewable (not just pollution); [1]

(ii) because existing sources increase CO_2 / SO_2 / eq.;
global warming / acid rain / eq.;

limited fossil fuel resources;
will not have any in the future / cost more to obtain / industry will not have energy;
increased demand;
due to increased population / increase technology;
energy security idea developed; [3]

3 (a) (i) correct plot;
2 lines joining points; [2]

(ii) some data supports it but some does not / accept idea of partially agree;
so 3 out of 5 support giving more evidence for than against ORA;
ref. Mato Grosso / Tocantins / Maranhao support;
Rondonia / Amazonas do not fully;
ref. to not given the scale / not given all the areas of the Amazon / relative scale of increase and decrease;
correct use / interpretation of data / figures; [4]

(b) burning wood gives off CO_2;
(CO_2) is greenhouse gas / causes greenhouse effect;
absorbs / traps heat;
heat is re-radiated back to the Earth;
loss of trees reduces CO_2 intake;
by photosynthesis; [4]

4 (a) (i) 4600; [1]

(ii) A 119 000
B 72 000
C 47 000
All three correct for two marks. One or two correct for one mark. [2]

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(b) (i) simple statement implying there are areas where run-off is low but population is high and / or run-off is high but population is low;
examples given;

simple statement implying there are areas where run-off is low and population is low and / or run-off is high and population is high;
examples given;

ORA. [4]

(ii) large numbers of people living close to each other;
so it makes economic sense / there is more money available for / investment in water treatment / supply;
such as chlorination / filtration / sewage treatment / piping;
piped water in urban / eq.;
urban water uses are kept separate;
political influence of urban populations;
water / drainage / purification / bottles water / desalination;

ORA for rural. [3]

5 (a) (i) copper ore;
iron ore;
iron; [2]

(ii) ref. organisms / plants / animals;
ref. to a long period of time (minimum thousands of years if time quoted);
(high) pressure;
buried in sediment; [3]

(b) (i) B rapid consumption
A conservation
C conservation plus recycling

Two marks for three correct. One mark for two or one correct. [2]

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(ii) no:
all non-renewable;
take a long time to be made;
used faster than they are made;
increased demand;

yes:
lifespan can be extended;
through reuse / recycling;
use of alternatives;
limit their use by using alternatives / legislation;
development of different ideas;
less use qualified, e.g. use more public transport; [3]

6 (a) (i) heather covers larger area / main plant;
heather surrounds bracken / eq.;
bracken in isolated clumps;
not much else; [2]

(ii) high growth rate / height means it gets more light / shades heather;
(deep / extensive) root system means it competes for / can get more water;
and minerals / nutrients than heather; [3]

(iii) herbicide / weed killer;
named example / how it works;
biological control;
named example / relationship to bracken;
physical control (e.g. pull out / cut down);
remove all the roots / to prevent shading effect; [2]

(b) ref. to eutrophication;
nitrates / phosphates / eq.;
in surface run-off / enters lake;
stimulates alga / plant, growth / algal bloom;
block (sun)light;
plants / algae die;
decompose;
uses oxygen / reducing oxygen;
kills / eq. fish / animals in lake; [3]

[Total: 60]

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