

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

Cambridge International General Certificate of Secondary Education

## **MARK SCHEME for the October/November 2015 series**

### **0680 ENVIRONMENTAL MANAGEMENT**

**0680/12**

Paper 1, maximum raw mark 60

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- 1 (a) (i) physical factors:  
temperature, humidity, water, rain, salinity, light, pH, soils, nutrients, wind, rock type, etc.  
*Any three.*
- living factors:  
producers, consumers, food chains/webs, competition, predation, pollinators, dispersal agents, decomposers, microbes, plants, animals (named), etc.  
*Any three.*
- All six for three marks. Four or five for two marks. Two or three for one mark.* [3]
- (ii) hg simply collect what they can find and roam around to do so;  
np heard animals but still roam around for new pastures and collect plants for food;  
sf grow crops/graze animals in one place and use that for themselves and to sell to others; ORA [3]
- (b) (i) clearance for fuelwood; subsistence and cash crop farming; settlement;  
timber extraction; grazing; [2]
- (ii) more efficient use of timber;  
recycling (paper / timber);  
named alternative materials to timber;  
increase price via tax;
- Allow any one point developed for an additional mark.* [2]
- 2 (a) (i) Mount Sinabung and other volcanoes lie on the GSF / a plate boundary;  
such faults allow magma / or molten rock described, to come to surface; [2]
- (ii) early in day;  
they had warning / ref. evacuation;  
volcano not actually near homes; [2]

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- (b) (i)  $(0.67 \times 240\,000 =) 160\,800$ ; [1]
- (ii) ref. better preparedness/infrastructure in other places in the world/ORA;  
more people live near volcanoes in Indonesia than anywhere else/ORA;  
many volcanoes in Indonesia;  
very powerful volcanoes in this region;  
very active plate boundary there;
- Accept other valid suggestions.* [3]
- (iii) soil fertility;  
scenery/tourism;  
family ties;  
precious minerals, etc.; [2]
- 3 (a) (i) *Two marks for fully correct plot, one mark if one error.  
One mark for correct labels.* [3]
- (ii)  $(21 + 5 + 6) = 32\%$  [1]
- (b) (i) description of anemometer/wind gauge (in terms of speed cups);  
and direction (arrow)/vane; [2]
- (ii) clean/non-polluting; detail;  
idea of free once erected/no (fuel) costs;  
ref. windy a lot in that country;  
ref. winds high in that country;  
ref. investment;  
sustainable;  
points about fossil fuels being none of these (limited to two marks);; [4]

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- 4 (a) (i) carbon dioxide  
photosynthesis  
oxygen
- Three correct for two marks. One or two correct for one mark.* [2]
- (ii) it is a greenhouse gas / eq.;  
explanation of what this means; [2]
- (iii) description:  
rises overall;  
any development of this (e.g. levels off between 2000 and 2004, drops at 2005, starts rising again at 2006);
- reasons:  
ref. to increased cattle; rice paddies; permafrost melting; etc.
- Max two marks from either section alone.* [3]
- (b) (i) NO<sub>x</sub> or sulfur dioxide; (*Accept formulae or words.*) [1]
- (ii) gases produced by only some countries;  
blows to others in the atmosphere; [2]
- 5 (a) (i) oil; [1]
- (ii) raw sewage;
- adds nutrients to water;  
causes plant algal growth;  
which die and oxygen is used up; [3]
- (iii) plastics;
- ref. currents swirl OWTTE;  
carrying plastics to these places where the water is still;  
plastics (mostly) float;  
do not degrade (very quickly); [3]
- (b) (i) typhoid and cholera both circled; [1]
- (ii) ref. treatment;  
before disposal;  
keep away from fresh water; [2]
- 6 (a) (i) nutrients / minerals / named mineral;  
oxygen; [2]
- (ii) chemicals such as pesticides / GM; help stop disease spreading;  
fertilisers; prevent soil exhaustion; [3]

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(b) (i)  $0.42 / 4 \times 100$ ;  
10.5%; [2]

(ii) should cover production costs;  
money guaranteed allows for conditions for work;  
money guaranteed allows for environmental protection;  
gives money to help in community;  
allows sustainability; [3]

**[Total: 60]**