

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the March 2015 series

0680 ENVIRONMENTAL MANAGEMENT

0680/12

Paper 12, maximum raw mark 60

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- 1 (a) (i) **A** carnivores/secondary consumers/predator;
B herbivores/primary consumers; [2]
- (ii) *advantages:*
shelter/food for rice pest predators;
food for herbivores which rice pest predators feed off;
plant might crop so can get profit from it;
- disadvantages:*
competition with rice for resources/food for rice pests;
need for more resources for second crop; [2]
- (b) (i) highest : Myanmar
lowest : Japan [1]
- (ii) supports it as all improve;
but still not achieving daily requirement in most countries studied;
ref. to India/Japan as special case;
some data to support views;; [3]
- (iii) pest/disease resistant crops;
development, e.g. Bt corn;
herbicide resistance;
development, e.g. helps weed control;
drought resistance;
development, e.g. widen range of crop;
other sensible example of GM (e.g. acid soil resistant, resistance to waterlogging); [2]
- 2 (a) (i) NW path /from SE;
from sea to land/change in direction on landfall, more northerly/NNW;
gets stronger over sea/until landfall/until Saturday;
weakens once on land/in India/from Saturday; [3]
- (ii) warm/>26 °C water;
hot air rises;
area of low pressure;
ref. pressure gradient;
ref. Coriolis;
ref. Earth's rotation; [4]

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- (b) better forecasting / prediction;
 better education about what to do during cyclone;
 better evacuation procedures;
 (better) shelters / houses;
 better food aid / medical care / etc.;
 better coastal defences;
 fewer people living near coast;
 ref. size of cyclone; [3]
- 3 (a) (i) troposphere; [1]
- (ii) falls (throughout troposphere) to stated temperature / stated altitude;
 levels off at stated altitude / stated temperature / remains constant over stated range / in tropopause;
 ref. to relevant temperature / altitude data in stratosphere;; [3]
- (b) (i) ref. CFCs;
 ref. chlorine in CFCs;
 ref. chlorine destroying ozone;
 over and over again / for years / ref. catalyst;
 thus decreases amount of ozone / thins ozone; [3]
- (ii) cancer;
 sunburn;
 eye damage / cataracts;
 mutation / damage DNA;
 any relevant consequence of mutation to non-humans; [3]
- 4 (a) (i) steady / small fluctuations / up and down from 1989 until 2004–5 / down until 1994 / up and down until 1999; 1999–2004 fairly level;
 rapid rise after this / between 2004/5 to 2008/9;
 fall in 2008–10;
 rise in 2010 and 2011;
 ref. to figures for another mark; [3]
- (ii) reasons why demand increased (electrification projects, or decreased (recession);
 discovery of substitute;
 too much supply;
 supply / demand idea discussed; [2]
- (iii) use of information from graph with reason, e.g. uneconomic to mine due to falling price; [1]
- (b) (i) landscaping / eq. (reshape);
 restoration (plant things / make soil suitable to plant things / put back to original);
 reclamation / eq.; [2]

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- (ii) lakes; landfill; nature reserve;
fill with soil; and a use (e.g. farming);

Or any one developed for two marks. [2]

- 5 (a) (i) very slow/no rise from 12 000 BPD until about 1000 BPD;
obvious steady rise from 1000 BPD until 500 BPD;
very rapid rise after 500 BPD; [3]

- (ii) appropriate y-axis scale;
axes labelled (or key for countries) must have units on y-axis;
plots accurate; [3]

- (iii) lower infant death rates / ORA;
ref. food;
ref. medical services;
ref. government policy;
ref. family planning;
ref. children to help parents / proved support;
ref. education of women; [2]

- (b) poor food supply; ref. climatic factors; lack of jobs; poor sanitation; disease; overcrowding;
high crime; poor amenities; lack of schools; lack of medical facilities; [2]

- 6 (a) (i) 22.95/23 m³ per year;;; [3]
OR
substituting values correctly into the equation;
clear expression;
22.95/23;

- (ii) Sun warms water;
water is evaporated from oceans/seas/lakes;
this vapour rises into the atmosphere;
condenses to liquid water; [2]

- (iii) polluted / not clean idea;
ref. water-borne diseases/bacteria;
specific example of either; [3]

- (b) allows light (because shallow);
ref. photosynthesis;
makes food that fish eat / phytoplankton / zooplankton;
ref. nutrient upwelling; [2]

[Total: 60]