

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

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the March 2015 series for most Cambridge IGCSE® components.

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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; [3]

- (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]