CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2

0680 ENVIRONMENTAL MANAGEMENT

0680/13 Paper 1, 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 October/November 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

1 (a) (i) A growing crops/arable
B pastoral/keeping animals/livestock/cattle

(ii) any two of:

pesticides are chemicals which kill harmful insect pests;
which eat/damage crops;
cause disease;

(iii) any two of:

eutrophication;
increase in nutrients/nitrates/phosphates in stream;
which cause a rapid growth of algae/algal bloom;
algae die;
increase in organic matter;
bacteria decompose of dead algae;
oxygen level lowered;
death of organisms/aerobes/not enough oxygen for plant/animal life; [4]

(b) any three separate points or two points with one developed related to quantity and/or quality

quantity:
resistance to pests/diseases/drought/salinity;
tolerance of weedkillers/herbicides;
AVP;

quality:
improved nutrient content;
enhanced appearance/colour/e.g. golden rice;
superior/regular/better size;
improved ripening/flavour;
longer lasting/remain fresh for a longer time/e.g. tomatoes;
AVP; [3]

[Total:10]

2 (a) (i)

	Sunday 23rd October	
local time	13:41	
magnitude	7.2	
number of people dead	604	
buildings destroyed	11 232	25

[1]

(ii) there have been many/2500 aftershocks in the area since the October earthquake; [1]

(iii) any two with relevant explanations
Food/clothing/medicine/clean water/chemical toilets/sniffer dogs/AVP; [2]

(b) **epicentre:** the place on the earth's surface above the focus;
focus: the place in the earth's crust where the earthquake starts; [2]

(c) credit 2 marks for description/statement why some earthquakes are more damaging with 2 marks for development/explanation
no credit for magnitude/strength
no credit for development taken from resource

depth from surface/focus;
distance of epicentre from centre of population;
population density/urban or rural;
state of preparedness/level of development (developed/developing rich/poor); geology/ soil/type;
time of day/time of year;
quality of building construction/design;
existence of warning systems/speed of relief/aftercare;
damage to infrastructure/water/gas;
development could refer to fires;
tsunami in some parts; [4]

[Total: 10]

3 (a) (i) January 413 mm;
December 330 mm;

(ii) 3;

(b) any two descriptions developed correctly:

tall (1); to get sunlight (1);
drip tips (1); remove heavy rainfall (1); falls every afternoon (1);
large leaves (1); allow more transpiration (1);
thick/dark/leathery/waxy leaves (1); withstand high temperatures/absorb more available light/allow more photosynthesis (1);
flexible leaf stems; leaves move with the sun to maximise photosynthesis
shallow roots (1); extract soil nutrients (1); from surface layers (1);
buttress roots (1); support weight of trees as they grow to reach sunlight (1);
trees are evergreen/deciduous trees (1); shed their leaves at different times (1);
distinct layers/stratification (1); competition for heat, light, rainfall (1);
few/no branches on trees (1); grow upwards towards the light (1);
tallest trees smooth trunks small leaves (1); wind (1);
tallest trees small leaves (1); strong sunlight [4]

(c) any three of:

trees/tree litter no longer protect soil;
roots no longer hold soil together;
soil is exposed to heavy rain;
surface run-off increases;
top soil is washed away/eroded; [3]

[Total: 10]

4 (a) (i) A evaporation;
B transpiration/ evapotranspiration;
C precipitation;
D runoff; [2]

(ii) irrigation;
water drawn off stream to give to crops; [2]

(b) (i) F is smoke maybe with sulfur dioxide/NOx gases;
dissolve in rain at C;
to give acid rain;
dissolve stone of buildings; [4]

(ii) more organic matter in Z / eq;
more bacteria/ microbes / eq in Z; [2]

[Total: 10]

5 (a) (i)

ocean water heated above 26 °C	C
eye	A
warm moist air	B
strong winds up to 300 km/hr	E
torrential rain	D

All 5 correct = 3 3/4 correct = 2 1 / 2 correct =

(b) (i) any four separate points or developments:

torrential rain; flooding;
loss of life/possessions;
damage to buildings/homes/schools;
trees uprooted/plantation crops (e.g. coconut etc.);
damage to crops/farmland/irrigation works/death of livestock;
disruption to clean drinking water/sewage treatment/waste; disposal/electricity power lines/telephones;
spread of disease/cholera/typhoid;
disruption to roads/railway/airports;
salt contamination; [4]

(ii) any three separate points or developments:

hazard preparedness/education/emergency drills/procedures
vacuation;
cyclone shelters;
prediction using weather satellites/sea patterns/animal behaviour;
building villages on levees;
designing houses to resist storm surges; [3]

[Total: 10]

6 (a) (i) Europe rural number of people = (199/100)*5 = 10; (accept 9.95)
Europe total number of people = 10 + 5 = 15; (accept ecf, accept 14.95)

If correct working is shown for both sums, but no answers, max 1 [2]

(ii) people living in rural communities are more likely to have access only to unsafe water/AW; accept clearly expressed ORA in terms of urban communities and/or safe water;
people living in Africa are more likely to have access only to unsafe water/AW; accept clearly expressed ORA in terms of Asia and/or safe water;
although the percentages of people with access only to unsafe water are much higher for Africa, the total number of people is higher in Asia;
AVP; (eg. the total number of people exposed to unsafe water in Asia is higher than in Africa because the total population is much bigger); [3]

(b) (i) (Anopheles) mosquitoes, are the vector for/carry, *Plasmodium*/organism that causes malaria/AW;
the larval stages of the mosquito life-cycle live in water lay their eggs in water/AW; (accept mosquitoes breed in AVP; e.g. (adult mosquitoes do not fly far and are t densities close to water/AW);

(ii) one mark for the strategy and one for a correctly related

pour kerosene/oil on water;	kills larvae;	
drain marshes/stagnant water;	stop mosquitoes breeding;	
spray insecticides/pesticides;	kills mosquitoes/larvae;	
prophylactic drugs/choroquine/larium;	kills *Plasmodium*/parasite;	
insect repellent;	stops mosquitoes biting;	
sleep under mosquito nets;	stops mosquitoes biting;	[max 3]

[Total: 10]