

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the November 2004 question paper

0680 ENVIRONMENTAL MANAGEMENT

0680/01

Paper 1 (Alternative to Coursework),
maximum mark 60

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which Examiners were initially instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began. Any substantial changes to the mark scheme that arose from these discussions will be recorded in the published *Report on the Examination*.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes must be read in conjunction with the question papers and the *Report on the Examination*.

- CIE will not enter into discussion or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the November 2004 question papers for most IGCSE and GCE Advanced Level syllabuses.



Grade thresholds taken for Syllabus 0680 (Environmental Management) in the November 2004 examination.

	maximum mark available	minimum mark required for grade:			
		A	C	E	F
Component 1	60	49	39	28	23

The threshold (minimum mark) for B is set halfway between those for Grades A and C.

The threshold (minimum mark) for D is set halfway between those for Grades C and E.

The threshold (minimum mark) for G is set as many marks below the F threshold as the E threshold is above it.

Grade A* does not exist at the level of an individual component.



November 2004

INTERNATIONAL GCSE

MARK SCHEME

MAXIMUM MARK: 60

SYLLABUS/COMPONENT: 0680/01

**ENVIRONMENTAL MANAGEMENT
(Alternative to Coursework)**



Page 1	Mark Scheme	Syllabus	Paper
	ENVIRONMENTAL MANAGEMENT – NOVEMBER 2004	0680	1

- 1 (a) (i) Convergent or destructive; either for the mark. (1)
- (ii) Anywhere where the two plates meet. (1)
- (iii) Oceanic and continental plate move (towards each other); **collide here for one**); oceanic plate moves under continental plate; friction in the subduction zone causes melting, molten rock rises through weakness in the crust,
any two (2)
- ® Discussion of earthquake
- (b) (i) To help understand how volcanoes work; so that warnings may be given prior to an eruption; therefore saving lives and property
any (2)
- (ii) Any two of : cannot afford to move/fatalism/fertile soils/geothermal energy/tourist possibilities/**cheap land/new land**
2 x 1 (2)
- (c) Accept any sensible suggestion; one for naming, one for explanation rebuilding/money/tents/emergency aid. (2)
- Total: 10**
- 2 (a) (i) Dam is built across a river; to create a head of water/res/lake/avp; water taken down through dam to a generating station; water flowing down; **where turbines create the electricity; by turning; reference to generator** (3)
- any three points
- (ii) Because dams are often very large/(therefore) take **much** time and money to build; infrastructure to distribute electricity/**service facility** also expensive; **loan interest; material/labour costs; inaccessible site; rehousing costs; land prep costs; any ONE sensible use of reservoir; AVP** (2)
- (b) Most likely answers are clean; renewable; **cheap to run/no imports needed** (2)
- (c) large areas of land flooded; people have to move; unsightly; methane emitted from rotting vegetation; **loss of habitat; downstream effects; water 'stealing'; build up sediment; collapse of dam with sensible/relevant consequence**
any three 1 each OR any two plus a development mark for either (3)
- Total: 10**

Page 2	Mark Scheme	Syllabus	Paper
	ENVIRONMENTAL MANAGEMENT – NOVEMBER 2004	0680	1

- 3 (a) Farmers put **fertilisers/named fertiliser** (nitrates/**pot./phosphate**)/pesticides on their land; rain will take some down into the soil; where it moves through the soil to rivers.
Accept similar points about slurry and runoff to a maximum of three simply stated points. (3)
- (b) **Algae growth faster; block light; die**; bacteria in rivers **break down dead algae**; uses up large amounts of oxygen to break down pollutants; leaving the river short of oxygen; causing damage to fish and other water life; **reference to eutrophication**;
Animal waste; (leading to eutrophication) points
Animal waste; diseases (e.g. of fish/humans)
Food chain amplification effect described. Idea that pesticides poisonous worth one. (3)
- (c) There is a wide variety of points possible here, give full credit for developed points and examples. e.g:

River Ganges is sacred to Hindus; so river burial is a regular ritual; and would be hard to stop for the large Hindu population of India.
There are many other simpler points like developing countries will often lack the infrastructure; alternative ways of disposing of waste; areas around major rivers are often densely populated; **lack of education; lack of money** (4)
- Total: 10**
- 4 (a) (i) temperature inversion (1)
- (ii) 1000-1200 metres (1)
- (iii) Emissions from factories/power stations/cars are unable to disperse in the atmosphere; prevented from rising further by the increasing temperatures; so the pollution stays where it is; near to the ground; **cannot spread sideways because of relief**; (2)
- (b) Cars; accept ideas like car sharing; public transport; **walking/bikes etc**; as well as ideas about cleaning up vehicle emissions.
Factories; accept physical ideas chimneys or anything to do with legislation; **alternatives to fossil fuels**.

NOTES: need not mention cars AND factories for full marks, a list is max 3 but continuous prose which really just covers four suggestions could work if judged to be well written and more than mere list. (4)
- (c) Answers will likely be about the destruction of the ozone layer; global warming are relevant. Accept ideas which develop the scientific, (chlorine atoms etc./**danger of UV**) or ones that do not. (2)
- Total: 10**

Page 3	Mark Scheme	Syllabus	Paper
	ENVIRONMENTAL MANAGEMENT – NOVEMBER 2004	0680	1

- 5 (a) Accept anything that leads to a logical sequence of events, e.g. burn vegetation - harvest crops - abandon garden and move on.
burn - rain - (move to) new (3)
- (b) Gets rid of unwanted vegetation (weeds)/makes 'space' for plants/crops to grow; ashes help to enrich the soil; **no artificial fertiliser needed:** (2)
- (c) (i) Because only small clearings are made in the forest; which can easily re-grow if left for long enough; therefore the environment is sustained.
any two (2)
- (ii) Population growth will mean a greater demand for **food/land**; so people may have to clear larger areas of forest; and return to those areas before they are fully recovered. (3)
- Total: 10**
- 6 (a) (i) One mark for each accurately completed bar. (2)
- (ii) The number of 60+ will exceed the number of 0-19's; **must be comparative for the mark.** (1)
- (b) A larger proportion will need looking after by a smaller proportion of the population; taxes may have to rise for care for the elderly; ageing workforce may become less flexible and less ready to assimilate new ideas.
Credit any two sensible suggestions which contain some level of explanation. (4)
- Government controls e.g. China: education of women; greater provision of information about or physical manifestations of birth control etc. (3)
- Give full credit for examples and development.
Total: 10