

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the June 2005 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 June 2005 question papers for most IGCSE and GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

Grade thresholds for Syllabus 0680 (Environmental Management) in the June 2005 examination.

	maximum mark available	minimum mark required for grade:			
		A	C	E	F
Component 1	60	43	26	19	15

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.

June 2005

IGCSE

MARK SCHEME

MAXIMUM MARK: 60

SYLLABUS/COMPONENT: 0680/01

ENVIRONMENTAL MANAGEMENT
(Alternative to Coursework)

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- 1 (a) (i) Two countries correctly plotted; 2 x 1 =
Allow a little leeway esp on income. [3]
- (ii) The higher the income per head, the higher the energy consumption; higher domestic use of energy/higher industrial use; (development) because of (e.g.) more domestic machinery/greater industrial output owtte.
- Allow answers that refer to developed and undeveloped countries as 2 distinct groupings on the graph, usually for just 1 mark. [3]
- (b) Advantage:
Very little natural resource/uranium needed (allow resource (relatively) abundant)/waste limited/waste easily disposed of/little (no) (air) pollution/; ® cheap, but acc. Cheap to run.
- Disadvantage:
Waste around for a long time/risk of major disaster (owtte)/expensive to set up/nor safe; ® cause a lot of pollution. [2]
- (c) Increased efficiency in use; insulation/recycling/power from waste; minimise use in transport by walking/cycling/car sharing/buses/trains etc.
- and/or
- new technology/renewable/alternative; wind/tidal/wave/solar. For the 3 marks, they must mention at least 2 ways, but three separate strategies is ok.
- ® just decrease use without how, vague ref. to laws to stop use. [3]
- [Total: 10]
- 2 (a) (i) Because the pollution can be trapped in the valley, owtte. [1]
- (ii) Soil erosion/mudslides down the valley sides; because there are no trees to hold the soil together increased flooding/surface run-off/reduced farming opportunity. [2]
- (b) (i) Disease spreads/eutrophication (stated or explained)/death of fish/® water poisoned. [1]
- (ii) Laws to prevent pollution/fines on pollution, owtte; water treatment before disposal; water treatment after disposal; education about water use; filter water; chlorinate water. [3]
- (c) Landscaping/restoration/reclamation/waste management at source. Allow development marks, so that one well-explained strategy could get all 3 marks. Such points as afforestation/growing plants; adding topsoil/neutralise soil/liming of fresh water. [3]
- [Total: 10]

Page 2	Mark Scheme	Syllabus
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- 3 (a) (i) Correct way round (warm then cold). [3]
- (ii) Two systems of circulation; one (system) in the North Atlantic and one in the South Atlantic; named currents within the circulation; Give one, or two marks for a description of correct details. Circular/clockwise/anticlockwise. [3]
- (iii) Reduce temperatures in (summer); reduce precipitation from winds coming from over the sea; may cause coastal fog; examples. [2]
- (b) (i) Fish a body of water so extensively as to exhaust the supply of fish/more than they should owtte ® catch more feed than needed etc. [1]
- (ii) Fishermen stand to lose out in the short term if there are restrictions, so they will be unwilling to comply; if they are controlled in coastal waters, they are likely to go further into international waters; where international action is the only solution. [3]

[Total: 10]

- 4 (a) (i) The heavy rain. [1]
- (ii) Deaths much higher in Bangladesh/or give figures. [1]
- (iii) Homelessness/house destroyed/large area flooded/ ® diseases. [1]
- (b) Basically, the difference between a developed and a developing country: USA can afford better flood defences; (credit examples); USA is likely to have better flood warnings; means of evacuating people when warnings are given; population more dense/higher in Bangladesh. Better medical/infrastructure. Reverse arguments can be credited. [3]
- (c) Helps farming by either flooding the land when you need it to grow rice/The floods may deposit fertile silt/water washes away sewage ® chance to build better house eq [1]
- (d) Accept yes or no answers; though 'no' is more likely. Marks for reasons only:

Yes; is about enabling people to have longer to get out of the way if a flood warning is given well in advance

Or

No, is largely about the fact that in a developing country, you would need better infrastructure (roads; communication) if people are to be evacuated. People in poor country may ignore warnings even if given because need to carry on farming for life.

Credit arguments which give both reasons for yes and no. [3]

[Total: 10]

Page 3	Mark Scheme	Syllabus
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- 5 (a) (i) Introduction of high yielding/hybrid varieties of rice and/or wheat; into developing countries; use of pesticides/herbicides; improved management; increased use of mechanisation/machinery/modernisation of farming. [2]
- (ii) One mark for correctly drawn axes; two marks for correctly plotted figures. One major mistake loses one mark. If axes wrong way round still credit correct plotting with axes candidate has drawn. Can be either bar chart or line graph. [3]
- (iii) General upward trend; drop between 1931 and 1961/slow increase at first/doubled. [2]
- (b) **Yes:** good because then the full benefits of increased yields can be felt; many plots of land far too small; to be efficient
- And/or
- No:** unemployment; less technology; bad because poorer farmers may lose their land; thus all the benefits of land ownership; such as secured food for family/profits for own use.
- Allow credit for answers which give arguments for both yes and no. [3]
- [Total: 10]**

- 6 (a) (i) Algae/mosquito larvae/crayfish/raccoon/female mosquito; each error less 1; arrows not drawn or drawn in wrong direction minus 1. [3]
- (ii) The sun/light owtte. [1]
- (b) (i) Any suitable strategy plus development. For the two:
e.g.
- pour oil on water; kill larvae owtte;
 - drain ponds etc.; remove mosquito habitat
 - pesticides; kill adults
 - introduce natural enemies (e.g. increase frog nos. by introductions; eat adults)
- (A) use of chemicals that kill but not just chemicals. [2]
- (ii) Loss of mosquitoes leads to effects on other organisms in web, discussed for two, 2 marks each discussion.
e.g. Raccoon nos. go down; loss of larvae as food hawk nos. go down; reduction in crayfish; frog nos. go down; loss of male mosquitoes as food small fish go up; more algae to eat etc.
Any species in the web would be affected, for mark effect must be correct direction with suitable explanation. Accept extinction as same as nos. go down.
- Allow credit for discussion of food chain effect. [4]
- [Total: 10]**