

**MARK SCHEME for the October/November 2008 question paper**

**0680 ENVIRONMENTAL MANAGEMENT**

**0680/01**

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.

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.

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Page 2	Mark Scheme	Syllabus
	IGCSE – October/November 2008	0680

- 1 (a) (i) 400,000/0.4 million
- (ii) 8,600,000/8.6 million (allow 8.8 million if (a) (i) 0.2 million, ecf)  
allow 8.5 million
- (b) benefits**
- people pay money; goes into conservation/schools, hospitals;  
more jobs; AVP up to 2
- R** negative things such as don't kill whale/don't disturb whales
- non benefits**
- people travel on boats; use fossil fuel; create pollution for 1; AVP up to 2 [max 3]
- (c) (i) correct arrows from eaten to eaters, all correct [1]
- (ii) a human/shark/killer whales [1]
- (iii) phytoplankton;  
zooplankton/whale/human;  
the sun/light; [3]
- 2 (a) (i) goes up to 1994/5; levels/falls (slightly); then rises again; sensible use of figures, any [2]
- (ii) produced 5,000,000 mt  
exported 4,100,000 accept 4 or 4.2 (but nothing in between 4 or 4.1 or 4.2) mt,  
therefore kept 900,000 (or 800,000) or 1 mt [2]
- (b) (i)** reduced biodiversity;  
soil erosion;  
habitat loss;  
loss of species;  
flooding;  
decreased rainfall/increased temp/increased sunshine (i.e. one mark for a weather effect);  
AVP any [3]  
**R** deforestation/loss of TRF products
- (ii)** (carbon dioxide) given off in burning less than; that taken up; when crop grows; allow one for carbon neutral; any [3]

Page 3	Mark Scheme	Syllabus
	IGCSE – October/November 2008	0680

- 3 (a) (i) mountains/volcano R earthquake (I) qualifications if correct
- (ii) destructive/converging; one plate pushed under another; upper plate buckles; mountains may form; friction leads to heat; plates under pressure; volcanoes erupt; any
- (iii) plates rubbing against each other/friction [1]

(b) (i)

	C	B
Date	12/03	12/03
Magnitude	6.8	6.8
People killed	2	50 000
Damage	1 clock tower	many buildings/eq

1 mistake 1 mark, more than one zero [2]

- (ii) poor/good buildings; poor/good any aspect of aftercare; poor/good warning systems; distance of epicentre; population density diffs; time of day diffs; rich/poor country; dev/developing; AVP [3]

- 4 (a) (i) large no of (big) rivers; low lying country/mainly delta; surrounded by mountains; high, eq. rainfall/monsoon rains/cyclones; snow, eq. melt; any [3]

- (ii) less rain now intercepted; less absorbed (by roots); silting up; therefore increased runoff; therefore increased river flow; [3]

- (b) (i) dams; levees/embankments; floating houses; terraces; drainage channels; any [2]

- (ii) early warning; good after care; houses on stilts/high ground; sand bags; AVP [2]

- 5 (a) (marking points in italics)

	Advantage	Disadvantage
chemical fertilisers	increase productivity	<i>cause water pollution/details</i>
pesticide	<i>increase crop production; kill harmful insects (eq.)</i>	damage wildlife by getting into food chain or depriving predator species of food
machinery	makes farming more efficient and boosts yields	<i>uses fossil fuels/emits carbon dioxide expensive/loss of jobs/noise pollution/soil compaction/avp</i>
monocultures	increase crop production	<i>increased soil erosion/exhaustion/decrease in nutrients/spread of disease/ruin if crop fails</i>

[4]

<b>Page 4</b>	<b>Mark Scheme</b>	<b>Syllabus</b>
	<b>IGCSE – October/November 2008</b>	<b>0680</b>

- (b) (i) GM involves, genes from OTHER species/changing genes eq; much faster; AVP [1]
- (ii) higher yield/more profit due to; pest resistance; disease resistance; herbicide tolerance; better due to (no mark); increased nutrient content; control ripening; colour improved; flavour improved; size; AVP, any [2]
- (iii) possibility of superweeds/eq; moral objections; health concerns; AVP [2]
- 6 (a) (i) coal, oil, gas; all for [1]
- (ii) nuclear [1]
- (iii) renewable OR coal OR renewables AND coal [1]
- (iv) solar/wind/tidal/hydro/geothermal R water, any [2]
- (b) (i) top soil added/return of overburden; levelling; planting; fertilising; any [2]
- (ii) A [1]  
roof and walls insulated:  
therefore two of 3, compare with others [2]