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## UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

**International General Certificate of Secondary Education** 

## MARK SCHEME for the May/June 2010 question paper for the guidance of teachers

## 0680 ENVIRONMENTAL MANAGEMENT

0680/42

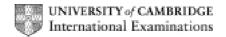
Paper 42 (Alternative to Coursework), maximum raw mark 60

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 must be read in conjunction with the question papers and the report on the examination.

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Page 2		Mark Scheme: Teachers' version	Syllabus	Paper			
		IGCSE – May/June 2010	0680	42			
(a) (i)	to of (ig	eliable/eq; refere	nce to variabil				
(ii)		crease in grazing = increase in soil erosion/eq; nore reference to years)		I			
(iii)	20	02, 2007, 2008; (more or less years =0)					
(iv)	20	01 (any two of 2000, 2003, 2004);	]				
(v)	<ul><li>(v) rods moved/eq by animals; soil erosion; only 5 points measured; soil might b after erosion; AVP;</li></ul>						
(b) (i)	description of a random or systematic method; further detail; at least 10 quadrat each area; construct recording table/notebook; record/count/calculate total numplants; identify species/name using books; (ignore reference to metres squared)						
(ii)	ca flo	oves/teeth damage some plants so they die/vegetat nnot keep up with rate of grazing/eq; plants survive to wer/set seed; reference to root damage; reference to d unpalatable species;	out cannot regen	erate/reproduc			
(c) (i)	<u>bo</u> plo	entation; th axes labelled (minimum is a reference to number, yot data from column one in table; plot data from colur plot)		(allow one er			
(ii)	sp	crease in species (until 2008), then a plateau/eq; ecies fluctuate/no increase or decrease/eq; (allow ateau)	no trend igno	re reference			
/iii)	) so	me plants cannot grow/species now extinct; seeds lecies have taken their place; soil not now suitable					

(d) steep slopes encourage surface run-off/soil movement; cooler temperatures means slower plant growth; recovery of plant cover to slow; so limited interception/described; thin topsoil easily lost/more soil erosion; full recovery now not possible; loss of soil fertility/nutrients

[2]

lost/reference to leeching;

(mark the ideas not the exact wording)

Page 3	Mark Scheme: Teachers' version	Syllabus	Paper	
	IGCSE – May/June 2010	0680	42	

- (a) (i) can be broken down/decomposed by living organisms/microbes/bacteria/enzyme action/eq;
  - (ii) C 2.3(3); D 2.2(1)/ 2.20; [2]
  - (iii) polluted plants grow slower than control; all grow the same/similar by day 12 /end of period; polluted grass grows taller/faster from day 13 to 24/eq;(must have reference to B C D if 'polluted' is not in the answer)
  - (iv) (BCD have) more root growth/absorption/so more water/minerals/named mineral for more growth/photosynthesis/more minerals now available as oil has broken down/A/ control plants grow quicker at the beginning as not inhibited by oil/eq; (allow converse statements)
  - (b) (i) animals will not have much food/grow slowly; toxic chemicals absorbed (by animals); might be poisoned/die; meat might taste bad/be toxic/poor quality/cannot be sold to local people/eq;
     [2]
    - (ii) more food for animals; gives soil time to recover/grass to grow; less risk of poisoning/ healthier for animals; healthier for humans [2]
    - (iii) overgrazing not likely/likely to be sustainable/eq; more yield of plants/animals after one year/eq; plant grass prevents soil erosion; plant grass reduces toxicity/eq; some oil has biodegraded/eq; some income earlier than plan B/eq; [2]
  - (c) (i) yes; the plants show reduced growth for the first 10 metres/near factory; (accept converse statements) [2]
    - (ii) sulfuric acid/H<sub>2</sub>SO<sub>4</sub>; (accept sulfurous acid H<sub>2</sub>SO<sub>3</sub>) reject sulfur hydroxide [1]
    - (iii) changes pH of soil water; makes it <u>more</u> acidic/lowers pH; so lower quantity of minerals available to roots; reduced plant growth; reduced photosynthesis; AVP; (reject plants die unqualified) [2]

Page 4				Mark So	heme: T	eachers'	versior	1	Syll	abus	Paper
					CSE – Ma					680	42
(a)	(i)	40 (9	%);								[1]
	(ii)	<ul> <li>(ii) some fish might not have migrated to Gulf in later years; reference to disease; large fish caught in early years/only small fish now; under recording; cannot reproduce fast enough to replace stock/less reproduction; AVP; (ignore reference to nets)</li> </ul>									
	(iii)	ii) size/length; sex; age; sexual maturity; [2]							[2]		
	(iv)				<u>ek</u> ; two cl istics ider			elled;;			[3]
(b)	(b) three relevant questions about fishing activities such as quantity caught, method used, number of days, details about boats;;; layout similar to question 1 (for 2 questions); [4] reject questions about sport fishing/nets										
(c)	(i)	coul	d overfi	sh sardir	ies/eq; po	ollution/di	sease fro	om cages	3;		[1]
	(ii)	eat	them; \ les/shar	whales/s	harks de	crease; (	due to I	ack of fo	ood; if	more sai	more sardines to rdines eaten by mbers in correct [2]
(d)		iber (	shing of boats								n per fisherman; ject reference to
	boat regu	t/eq; ılate	number	patrols	to enfor s/fisherme	ce rules	/times; ı	egulate	fishing		quota for each fishing zones; [6]

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