UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE Advanced Subsidiary Level and GCE Advanced Level

MARK SCHEME for the May/June 2008 question paper

9693 MARINE SCIENCE

9693/01

Paper 1 (Structured Questions), maximum raw mark 75

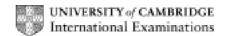
This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began.

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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CIE is publishing the mark schemes for the May/June 2008 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.



	Page 2		Mark Scheme	Syllabus	Paper
			GCE A/AS LEVEL – May/June 2008	9693	01
1	(a) (i)	Sun/	/light;		[1]
	(ii)) phyt	oplankton – krill – minke whales/penguins - killer whale	es	[1]
	(iii)		sfer of energy from each trophic level; sfer of biomass from each trophic level;		[2]
	(iv)		mid with 5 levels; n level named;		[2]
	(b) kil	ller wha	ales have other food sources/examples and will eat mo	ore of these;	[1]
	(c) (i)		6;; ect working scores 1		[2]
	(ii)	in fa	eat/respiration; eces/waste products; e parts not eaten;		[3]
	lo [,] ph le: re	of: Il in pro w light notosyn ss phyt duced fect on	[3] [Total: 15]		
2	to us	form o	ht energy/owtte; organic molecules/named examples; rbon dioxide and water, e to chlorophyll;		[3]
	ov re (id re (fd (1	eplacem ver time eference dea of) eference or) light examp	nent of communities/species; e; e to changes in populations; serial changes in environment; e to competition; c/nutrients/space; ble) Bacteria, Tevnia, Rifta, Mussels; chermal vents;		[4]

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[Total: 7]

	Page 3		Mark Scheme	Syllabus	Paper
	-		GCE A/AS LEVEL – May/June 2008	9693	01
3	(a) (i)		cess 1) runoff; cess 2) uptake/absorption;		[2]
	(ii)	to m	ake protein/amino acids;		[1]
	(iii)	bact	eria;		[1]
	(iv)	harv	esting of fish/removal of fish/fish eaten;		[1]
	(b) (i)	wast decr as co	eases; te/excretion from fish; eases; onverted to nitrite; rrect reference to numbers from graph;		[3]
	(ii)	(nitri nitra	e falls; te) converted to nitrate; te increases; rrect reference to numbers from graph;		[3]
	(iii)	rapio	d plant growth/algal bloom/used up as protein;		[1]
					[Total: 12]
4	(a) 4 of: fringing reef on volcanic island; land sinks/ subsidence; barrier reef forms; island sinks below sea level; atoll formed;		s/ subsidence; eef forms; nks below sea level;		[4]
		morp	hological analysis; ating;		[3]
	prov prov incr	vents vides vides ease	erosion of land; anchorages/protection for harbours; new habitats; s fishing areas; e to tourism/diving;		[3]

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[Total: 10]

Page 4		4	Mark Scheme	Syllabus	Paper
; (a	a) (i)	ax co 4 ¡	itable scale on <i>y</i> -axis; es labelled; rrect plots;; blots correct = 2 3 plots correct = 1	9693	01 [4]
	(ii	rui we sa	noff; eathering of rocks; Its dissolve in water, washed into sea;		
		ev ind un rel	essolution; etals in dust; rbon dioxide to form bicarbonate; aporation; creases concentration of ions; der water volcanic activity; lease sulphate and chloride ions; essolve in sea water/rain water;		
		(ot	ther valid reasons)		[6]
(I	b) (i)		4; rts per thousand;		[1] [1]
	(ii	sa lov red ind he	of: linity falls; w temperatures; duced evaporation of water; creased runoff from land/freshwater; eavy rain/dilution; ther valid reasons)		[4]
		(0	iner valid reasons)		[Total: 16]
(a)	a) (i)) 32	,		[1]
	(ii		4% per year; mark for correct working		[2]
	(iii	co as	arfish is predator/coral is prey/owtte; ral begins to increase when starfish reaches minimum le coral increases, starfish increases; ference to time lag/maximum number of predators when		[4]
	(iv	qu rai su ov co rei	of: ladrats; ladrats; ladrats; ladrats; ladrats; litable area; ler time; ler		[4]

Page 5	Mark Scheme	Syllabus	Paper
	GCE A/AS LEVEL – May/June 2008	9693	01

(b) reference to interrelationship/live together; reference to host;

one suffers;

one benefits;

tuna and nematodes/other named examples

[4]

[Total: 15]