

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE O Level

MARK SCHEME for the May/June 2006 question paper

5014 ENVIRONMENTAL MANAGEMENT

5014/02

Paper 2, maximum raw mark 60

These mark schemes are published as an aid to teachers and students, to indicate the requirements of the examination. They show the basis on which Examiners were initially instructed to award marks. They do 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*.

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- 1 (a) hot all year; many windy days; so evaporation rapid/speeded up/eq; [3]
- (b) they carry out photosynthesis; which makes food/organic molecules for algae to grow/provide food for consumers; [2]
- (c) energy lost /respiration loses energy; so only some food turned into consumer bodies/biomass; not enough to support more than two feeding levels; AVP; [2]
- (d) (i) sustainable, salt water never runs out; process is solar powered; no significant pollution; AVP;
- (ii) conservation, not many habitats for wading birds left; food chain can be maintained whilst evaporation goes on; AVP; [max 3]
- 2 (a) control building; build sewage treatment works; AVP; [2]
- (b) (i) any three valid points, such as
leave no litter; do not kill fish; do not take coral away; report any damage; AVP;; [3]
- (ii) 12; [1]
- (iv) 4 shore and dive only, 4 boat shore and dive only; 4 boat shore dive and snorkel; AVP; [max 3]
- (c) (i) nearly all boat access have higher % damage; highest shore damage 3.1% is only just higher than lowest boat damage 3.0%; [2]
- (ii) more dives in total, explained; anchors do damage; boats hitting shallow corals; AVP;; [3]
- (iii) 3-10; need for repetition to make findings more reliable/ref to means; [2]
- (d) (i) cannot be exactly repeated; survey of only one post not enough; no distances specified; no undamaged corals recorded; [max 3]
- (ii) correct orientation; length; all three posts; [3]
- (iii) 135, 150; [1]
- (iv) $15/150 \times 100 = 10$ (%); allow error from part (iii) [1]
- (e) more damage/twice as much damage; around every post; AVP; [2]
- (f) numbers of dives/divers at each survey; [1]
- (g) some mention of all three aspects to score max 6 valid points;;;;; [6]
- 3 (a) increased number of leaves; but reduced length; shorter plants less exposed to evaporation by wind; AVP; [3]
- (b) (i) 8 m on scale; [1]
- (ii) east-west line drawn; [1]
- (iii) orientation;
axes labelled;
plot leaves;
plot length; [4]

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- (iv) as distance increases from hedge number of leaves drops; and length of leaves drops; [2]
- (c) weigh fresh harvest from known sections of field/eq; [1]
- (d) two sensible densities/one may be lower than suggested;;; [2]
- (e) soil exhaustion/minerals used up; loss of soil structure/more prone to erosion; disease in crops; loss of biodiversity in context; AVP;; [3]

Total 60