

**MARK SCHEME for the May/June 2008 question paper**

**5014 ENVIRONMENTAL MANAGEMENT**

**5014/02**

Paper 2, 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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- 1 (a) (i) 90(%);
- (ii) 2009; **accept** 2.2 yrs
- (b) (i) some dying of infection; being caught by lions/unable to defend themselves/equivalent; some move away; poachers killed some anyway; AVP e.g. horns removed already; [2]
- (c) (i) three relevant questions + layout mark;;;;  
 refs to tourists once  
 refs to poaching once  
 these should be about how people feel e.g. eating rhino? killing rhino? damage to crops?  
 damage to buildings? [4]
- (ii) select only some villages at random; sample same number of people (e.g. 10% or specified number) in each village; same sex/age distribution in each village; AVP;; e.g. rich/poor people; different occupations; [3]
- (d) (i) if they are owned they will be looked after; does not pay to kill source of income; locals benefit so will put up with damage; AVP;; e.g. refs to reproduction [2]
- (ii) table drawn that is appropriate; headings for columns/rows (3) years; numbers; [3]
- (e) (i) horns will always give income/equivalent; good use of income/escape poverty/gives a job; ignore standard of living  
**reject** refs to government
- (ii) animals will not be allowed to become extinct; can breed/allows harvesting/horns regrow/ equivalent; [4]
- 2 (a) (i) May – August December – March; [1]
- (ii) February June; [1]
- (iii) orientation; axes labelled; plotting;; (allow one error per line/does not have to have a key) [4]
- (iv) both increase (fastest between 7–14 days); [1]
- (v) 20(%);; [2]
- (vi) price of peas/cost of irrigation kit; volume of water needed; AVP;  
**reject** area of field [2]
- (vii) pH; planting density; soil type/equivalent; fertiliser; type of plant; species/variety of pea; growing time; AVP;;  
 ignore same temp/light/wind  
**reject** soil unqualified [2]
- (viii) planting – ref to planting time/density/age of seed/type of seed; [1]  
 counting – ref to careful marking of plants counted/same sample size/equivalent; [1]  
 comparison – ref to use of weighing scales/collect from exactly same size area; [1]  
 (one mark max for each section)

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(b) plan may be for animal only, chick peas only, or mixed, also own knowledge rotation ideas but **not annual**, could be peas or animals or both; peas are leguminous/aid fertility/fix N; replanting after 5–8 years; animals feeding on crop residues; profit from selling cows/calves/meat; this farming does not need additional water/irrigation; AVP;  
**reject** refs to annual crop rotation [max 5]

3 (a) poisoning/toxic; by breathing; asthma/bronchitis/lung cancer/lung disease/breathing problems; through skin/burns/equivalent; AVP; e.g. ref to burns [2]

(b) extra gold worth more than cost of chemicals/increased profit/equivalent; [1]

(c) (i) to prevent overflow in heavy rain; poisoning wild life; AVP; e.g. drinking the contents; **reject** humans falling in/emission of gases [2]

(ii) poison soil; cyanide does not break down in dark/equivalent; leached through soil; enters watercourse; poisons fish/plants; AVP;; e.g. humans poisoned by feeding on plants/animals [3]

(d) (i) employment; qualified e.g. money for health care;  
(ii) will bring cultural/chemical/visual/noise/pollution;; AVP; e.g. health problems [max 3]

(iii) all on one side of river or away from cultivated area/village/equivalent; [1]

(iv) ponds could break/drain downhill into river/poison water supply; [1]

(e) ponds and crushing plant moved further away from villages on diagram; reasons given;;; e.g. noise; pollution of village; cultivated area; [4]

(f) monitor key species of plants/fish; apply same survey method regularly; describe sensible survey method = number; size/weight/length of fish; report fish kills; AVP;; e.g. check oxygen level  
**reject** measuring pH/equivalent [2]