UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE Ordinary Level

MARK SCHEME for the October/November 2007 question paper

5014 ENVIRONMENTAL MANAGEMENT

5014/02   Paper 2, maximum raw mark 60

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Cameroon

1 (a) (i) axes correct; axes labelled (yield) litres and at least letters to indicate each month;
(look for level in June July 1 mark, allow one other error for second mark);; [ ]

(ii) March; [1]

(iii) June and July; [1]

(iv) 615/9 = 68.3;; [2]

(b) (i) (use ladle/bucket) with volume marks/eq A weight of milk; [1]

(ii) suitable table drawn; headings; units (days and litres); [3]

(c) (i) shading below 1200 m (allow all across graph or just on land) [1]

(ii) $30 - (0.6 \times 7) = 25.8(^{o}C)$;;   ecf +1 mark [2]

(d) (i) $(50 \times 20/5 = 1000/5 =) 200$; [1]

(ii) to prevent contamination/eq/damage to well head/animals fall in; [1]

(iii) Advantages: quicker; more cattle watered; less hard work; further detail; AVP;
Disadvantages: need a bullock; second person; machinery maintenance; cost of machinery; need skills to work it; AVP;
(max 3 if only advantages or disadvantages stated)
R more time as a disadvantage [max 4]

2 (a) (i) species/number of trees the same; soil factors;; weather the same; fungus equally spread; AVP e.g. easier to run expt; [2]

(ii) so plots equally/fairly sampled/not biased/eq; [1]

(iii) co ordinates and random numbers; throw markers/eq; [1]

(iv) nutrients recycled; named examples/NPK; digestive enzymes from worms; mixing soil; add humus; improved aeration; improved drainage; AVP; R text i.e. dragging leaves down [2]

(v) plot **A** may have more worms/ora; or worms more active/ora; AVP; [2]

(vi) 1–6 farms or repeat on same farm,
Reason – check for similar effects/results of fungicide (on other farms) R accurate;

Expt areas
Reason – to check results (A accuracy);

6–12 weeks
Reason – to check that decomposition continues/eq; [3]

(b) (i) 2, 9;

(ii) 1, 4, 11;

(c) **A**; controlled expt/described; replication ideas; AVP;   [3]

(d) (i) similar numbers of pods infected; results could be chance/eq;

(ii) Deliberately infect trees – apply two treatments; repeat on another farm; different planting density; check for fungus on trunk/other parts; effects on other species; AVP; e.g. older/younger trees   [4]

3 (a) (i) answer related to bullet points as shown below

BT1 once or twice a year – so already rare and will become extinct/disappear;

BT2 smaller fish – not reaching maturity/breeding condition; more needed to be caught for food; so more work to catch them;

BT3 more boats – more pressure on fish stocks; too much fishing effort;

BT4 further out – more fishing grounds/species under threat; more dangerous work;

BT5 same answers as for BT2;;

Use of figures to support; risk of malnutrition/starvation; AVP;;   [max 5]

(ii) protein/vitamin D/energy;   [1]

(iii) two appropriate named diseases or waterborne/bred/related diseases;; ref to mosquitoes; ref to specific example of pollution; AVP;
R oil pollution   [2]

(b) (i) count fish/weigh fish; size; separate into species; adults/juveniles; how many boats fishing; record (in table);   [2]

(ii) quota; control number of boats; fishing days; mesh size; license; time of year; AVP;   [2]

(iii) do not know how to look after goats; do not want to give up way of life; no money for investment; food supply uncertain; attracts predators; specific environmental problem; AVP;   [2]

(c) reduced demand for fish; chickens/goats give alternative food supply; AVP;   [2]

(d) avoid extinction; keep genes for use later/eq; may be able to reintroduce later; AVP;   [3]