UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2010 question paper for the guidance of teachers

0680 ENVIRONMENTAL MANAGEMENT

0680/41 Paper 4 (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.

- CIE will not enter into discussions or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the October/November 2010 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

UNIVERSITY of CAMBRIDGE
International Examinations

1 (a) (i) to have control/ownership of project/eq; to learn skills/eq; could not pay for help/eq; reduce unemployment; AVP; e.g. avoid being cheated [max 2]

(ii) same number of males; and females; same area; same size/number of shelters; same food; same nest boxes; (allow same ratio/number of chickens;) [max 3]

(iii) to prevent spread of disease/eq [1]

(iv) 0.14; 0.16; allow both marks for correct working only [2]

(v) more eggs; more meat; prefer to eat it; more profit; quote relevant figures from source; faster growth rate; [max 3]

(b) (i) scale given; 6 and 80 animals indicated; two + shelters; two + water troughs; two + feeding troughs; [max 4]

(ii) supply protein/vitamins/A/D/minerals/only enough fat for health/eq; [1]

(iii) to work out expenses; to work out profit; pay wages according to hours worked; (R share profit fairly as in the stem) [2]

(iv) 150/600 × 100 = 25(%);; (allow one for correct working) [2]

(c) (i) to prevent gas leaks; to control temperature; to prevent explosions; easier to build; ref to thinner walls; less smell; ref to visual pollution; [max 1]

(ii) no need to spend time collecting wood; ref to deforestation; <u>sustainable</u> energy source; easy to light; saves money/eq; less pollution/environmentally friendly; [max 2]

(iii) charity/aid organisation (named)/government development funds/agency/eq/bank loans/ profit from sale of eggs/meat; [1]

(iv) local people produce own food; skills can be learnt/passed on to others; digestion reduces environmental damage/atmosphere qualified e.g. renewable energy source; grown on crop wastes; replace chicken stocks; [max 2]

© UCLES 2010

2 **(a)** X should be between the chicken enclosure and the village;
Valid reasons: short pipe/distance to wet rocks; short road needed; close to village for workers/eq; shorter distance to market/eq; asbestos dust less likely to harm workers/cover plants; (allow mine as source of gravel to build road/three valid reasons even if X in wrong position or not drawn) close to chickens for manure; [max 4]

(b) **(i)** Stevenson screen/wet and dry bulb/hygrometer; [1]

(ii) plants get plenty of light; for photosynthesis; high temperature; for fast growth; high humidity; limited transpiration/eq; [max 3]

(c) **(i)** 1.6 (rand) [1]

(ii) B A C;
Reasons:
shade first as seedlings would die/eq;
benches to have more pots/seedlings;
need more profit/product to justify expense for a donkey/cost of food for donkey/eq; [4]

(iii) it is a big investment/eq; extra work looking after donkey; further details e.g. vet care/ disease; cost of maintenance of cart/track; do not have/want to learn the skills needed; [max 2]

(d) **(i)** orientation; both axes labelled (days + ht in cm); plot for C; plot for D; allow one error for each plot (ignore plots for A and B) [4]

(ii) water; humidity; temp; soil type; soil pH; soil nutrients; light intensity; age of seedling; [max 2]

(iii) a fungus/damping off disease/(nematode) worms/bacteria/virus/parasite; [1]

(iv) cost; poison/contaminate themselves; other people; no protective equipment; not skilled in use; [max 2]

3 **(a)** **(i)** 800 and 275–280; [1]

(ii) 2005–2008; (allow 2 years in the range) [1]

(b) *better:* more money to pay for schooling; food; health care; household goods; seeds; livestock; tools; AVP;
R living standards unqualified
worse: men spend money before they get home(on drink); drugs; sex; may encourage crime in village; AVP;
max 2 for better or worse only [3]

(c) **(i)** 40–50 (m); plant species recover; plants per square metre recover; vegetation not likely to poison livestock; so livestock will not poison humans; [max 3]

(ii) sample beyond 50 m; more than one sample line; different times of year/eq; repeat in following years; take soil samples for cyanide; plant samples for cyanide; [max 2]

© UCLES 2010