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

0680/43 Paper 4 (Alternative to Coursework), maximum raw mark 60

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UNIVERSITY of CAMBRIDGE
International Examinations

1 (a) (i) push/pull factors/described e.g. find jobs/earn money to buy food; [1]

(ii) animals die/do not grow/sold off for other food; [1]

(iii) no ability to farm after drought without tools; ref to cost of tools after drought; [1]

(b) (i) living hedge is thorny so cannot be eaten; no need to cut trees to make fence; ref to deforestation; ref to desertification; do not need to buy materials to make fence; AVP; [max 1]

(ii) *advantage*: not cutting wood for fuel/renewable energy source/easy to gather/ash can be used as a fertiliser/do not need to buy fertiliser/fuel;
disadvantage: less manure to ground/increased risk of crop failure/soil erosion/ exhaustion/eq; [2]

(iii) help to pollinate crops/described; honey is an extra food source; cash from selling honey for any valid purpose (i.e. school fees/medical bills/buying farm materials); [2]

(iv) reduce the amount of disease; named disease; so less time of working/eq; not polluting well/drinking water; [max 2]

(c) 40 × 10/10.3 = 38.8($); A working only; [2]

(d) (i) sensible channels; connected to pump; [2]

(ii) salinity/salinisation; described; depletion of nutrients/named nutrient; [3]

(iii) more breeding grounds; mosquitoes lay eggs in water; longer to breed/eq; more mosquitoes to bite; [2]

(iv) allow ditches to dry out between irrigations; so larvae die off/eq; ref to fast flowing water; [2]

(v) oil on water; (impregnated) mosquito nets; repellents; other valid method; [2]

(e) (i) for growth/repair/development/reproduction/muscles/immune system; [1]

(ii) table drawn; suitable headings; correct rows; columns; [max 3]

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2 (a) (i) move to new pastures; live on animal products; ref to annual cycle of movement; AVP e.g. do not cultivate crops; [max 2]

(ii) soil remains protected/eq.; no overgrazing; so no deforestation; or desertification; max 2 [2]

(b) (i) loss of grazing land; interfere with migration routes; have to keep less animals; not enough for survival/eq; [max 2]

(ii) greenhouse effect; leading to climate change/global warming/described; high use of (fossil) fuel for heating; ref to acid gases from chimney; [max 2]

(iii) carbon dioxide absorbed by plants; by photosynthesis; makes sugar cane grow faster; [max 2]

(iv) 1: low costs; less coal/wood burnt; ash as fertiliser;
2: used to run cars; other chemical processes;
3: helps rate of growth; helps produce more food;

any 4 [4]

(c) (i) 3.1 – 2.7/2.7 × 100 = 14.8/15(%);; correct working only; [2]

(ii) yes; because the extra yield is worth more than cost of irrigation; allow if qualified e.g. high environmental/social costs; [max 2]

(d) (i) orientation; axes labelled;; plots; [4]

(ii) plant roots fully established/eq; soil most fertile; more leaves/photosynthesis; [2]

(iii) 7.2 – 5.8 (tonnes per hectare); [1]

(iv) (after) year 3; [1]

(e) (i) gloves/masks/goggles/overalls;; wash after use; breathing apparatus; do not pour chemical into water channels/water/eq; [max 3]

(ii) *commercial*: more yield; more profit; more exports; low cost of new canes; high cost of further inputs to maintain old canes; [max 2]

environmental: less risk of pesticide pollution; poisoning workers; less fertiliser used; so less risk of pollution; more carbon dioxide uptake; [max 2]

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