**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

**0680/42** Paper 4 (Alternative to Coursework), maximum raw mark 60

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**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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