CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2015 series

0680 ENVIRONMENTAL MANAGEMENT

0680/42 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 should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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1 (a) (i) provides protein; vitamins; named vitamins A / D etc.; omega oils; energy; [2]

(ii) weak immune systems; can easily kill;
allow other serious infections / eq.; stop growth / eq.; [2]

(iii) famine; food shortages; under-nourished mothers;
so not enough for growing baby / eq.;
mother smokes; premature birth; [2]

(iv) low calorie diet / energy intake; malnutrition; lack of protein;
deficiency diseases; [1]

(v)

2.49 / 2.50	20.08 / 20.03 / 20.0	normal
2.72	18.01 / 18.0	underweight

Any two correct for one mark.
Any three correct for two marks.
All correct for three marks. [3]

(vi) 20% is a significant figure / eq.;
obesity / overweight is quite rare / eq.; [2]

(b) (i) only one family / village; [1]

(ii) weighs every egg; [1]

(iii) 489; 48.9; *Allow ECF from first answer.* [2]

(iv) find total number of families and select every fifth one etc. / other valid method;

Accept randomly. [1]

(v) repeat (for more weeks); other times of year; more families; more villages; more districts; [2]

(c) yes as they will never run out of food; no need to buy food; good use of food waste;
AVP, e.g. only some food needed from environment; [2]

(d) (i) 315 000;; *Allow one mark for correct working / 585 000 alone.* [2]

(ii) chickens do not live long / eq.; stop laying eggs; need extra food / find their own food;
which might not be available / too expensive; ref. to data to show mortality rate; [2]

(e) (i) males breed with local hens; pass on genes for more egg laying / eq.; [2]

(ii) villagers do not keep hens in pens / eq.; this takes time; and money; eggs laid anywhere / in unknown locations; [1]

(iii) local hens are a genetic resource / CEP may reduce genetic variation; may lose disease resistance / eq.; may lose being adapted to climate; AVP, e.g. more eggs eaten by predators; [2]

2 **(a)** makes local maize cheaper to buy; so farmers confident they will get a good price / profit / eq.; keeps demand for local maize high / eq.; [2]

(b) **(i)** 6.66 / 6.67 / 6.7; 0; [2]

(ii) temperature; humidity; water supply; size / mass of cob; variety of maize; drying time; same source of leaf powder; etc. [2]

(c) **(i)** weevils could have died anyway; may have had no effect / eq.; to compare; act as a control; [1]

(ii) up to two marks for axes labelled;; up to two marks for plots;; [4]

(iii) rapid increase in death in first 12 hours, then slower increase; [2]

(iv) similar shape to other line and above 3.0 g; [1]

(d) **(i)** *4 correct positions for two marks. Three correct for one mark.* [2]

(ii) random; [1]

(iii) 35.4 / 35.42(%); *Allow one mark for correct working.* [2]

(iv) powder blown off; washed off; leaves protect cob; [1]

(v) powder could kill other species of insect / beneficial insects; reduce pollination; not possible to produce powder in large quantities; expensive to produce; AVP; [2]

(e) **(i)** use of a control treatment; measured mass of powder; equal quantities used; count live / dead weevils; count every 7 days / eq.; AVP; [5]

(ii) table drawn for six weeks; headings relating to the expected method;;

Allow ECF for headings. [3]

AVP = Alternative Valid Point.

[Total: 60]