**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

Cambridge International General Certificate of Secondary Education

# MARK SCHEME for the October/November 2015 series

## 0680 ENVIRONMENTAL MANAGEMENT

**0680/43**    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)** (most of the) sand is returned / damage only temporary / eq.;                                   [1]

  **(ii)** reduces imports; encourages manufacturing; employs more people;
     allows tax revenues; for infrastructure / named example; AVP;                                   [2]


 **(b) (i)** 3%;                                                                                       [1]

  **(ii)** 0.9 to 3.6 % / 2.7%;                                                                        [1]

  **(iii)** sample 5 / eq.;                                                                            [1]

  **(iv)** some form of sampling / measuring error; error with magnet; recording error, e.g. mass of
     sample; mass of ilmenite; AVP;                                                                   [2]

  **(v)** could have used a stronger / bigger magnet;
     different time with magnet; samples taken from deeper in beach; AVP;                             [2]


 **(c) (i)** *Accept reasonable responses, e.g.*
     question 1    can now see most of the sand is returned; ref. to temporary disruption; ref.
               to fishing still ok; turtles returning; AVP;

     question 2    now making more money; still able to fish most of the year; AVP;

     question 3    we all benefit now; keep earning money; need money to feed family;
               improve standard of living; example described;

     *Max. two marks for each question.*                                                             [5]

  **(ii)** a method that does not ask everyone; further detail, e.g. different ages / income groups;
                                                                                                     [2]


 **(d) (i)** so the mass of sand is correct; driver's mass must be included (both in and out) / e.q.;  [2]

  **(ii)** to keep pace with inflation / cost of living / eq.;                                         [1]


 **(e) (i)** suitable scales; axes labelled; up to two marks for plotting (allow one error);;         [4]

  **(ii)** increase until year 5; peak at year 3; over 200 employees between year 3–6; then
     decrease; constant from year 7–9;                                                                [2]

  **(iii)** more mechanisation / eq.; AVP, e.g. less demand / mineral licence runs out;               [1]


 **(f)** ref. to reduced soil erosion by rain; wind; more interception; root binding; returns fertility to
    soil; creates habitat; AVP, e.g. harvest coconuts;                                                [3]

**2 (a) (i)** 47; [1]

    **(ii)** correct line; *(Allow ECF.)* [1]

   **(iii)** 4320; 6120; [2]

   **(iv)** each nesting event is different / eq. / more nests gives more eggs / eq. / comment on
average; [1]

  **(b) (i)** dogs looking for food; humans can eat them; both damage nests; [2]

    **(ii)** red list helps make people / industry / planners aware of the problem;
CITES makes trade in turtles / products illegal; [2]

  **(c)** ratios change; less females to lay eggs; or less males to mate; population likely to go down;
[2]

  **(d) (i)** 655; 1888; [2]

    **(ii)** 110;        88;
108 / 109;   90; [4]

   **(iii)** use of any 4 comparative figures in statements, e.g. number of eggs per nest about the
same;
number of live hatchlings about the same;
so the proportions of undeveloped are similar and dead hatchlings are similar proportion;
AVP; [4]

   **(iv)** so the comparison is fair / eq.; [1]

    **(v)** to find out if Olive Ridley Turtles are recovering in numbers / eq.;
using same beaches for nests; control development near beach; AVP; [2]

  **(e) (i)** tie the flap down; remove the grill at (sea); [1]

    **(ii)** inspect fishing gear at sea; in harbour; sea patrols; fines; boats impounded; [2]

  **(f)** create special low-light zone near beach; reduce number of lights; max. power of lights;
reduce lighting during nesting season; reduce traffic near coast at night in season;
AVP, e.g. control development near beach; [3]

AVP = Alternative Valid Point.

[Total: 60]