MARK SCHEME for the March 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.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the March 2015 series for most Cambridge IGCSE® components.

1 **(a)** flooding; destruction of homes; schools / hospitals; transport links; farmland / crops; livestock; businesses / e.q.; other infrastructure, e.g. power lines / telecommunications; no drinking water / sanitation; spread of disease / named disease; injury / death; AVP; [3]

(b) **(i)** births not registered / e.q., e.g. ID card; population varies; high rate of immigration; changing / unknown / high birth / death rates; mobile population / migrant workers; difficult to carry out accurate census; AVP; [3]

(ii) 21 / 164; = 12.8(%); [2]

(iii) November – March; in other months too humid to dry; too wet; too many wet days; comment on temperature, e.g. hot enough for drying; [3]

Max. two marks for reasons.

(iv) 84; [1]

(v) poor pay; only way to make enough bricks / e.q.; to meet demand; make enough profit for owner; good use of fuel / e.q.; [2]

(c) **(i)** 67, 762, 3.3, 14 020

Any two for one mark. All for two marks. [2]

(ii) B; D; B; [3]

(iii) 4761; 4545; [2]

(iv) D most efficient use of coal; A least efficient use of coal; use of quoted figures to support answer; or calculated difference; not much difference in efficiency / B and E equal efficiency; C less efficient than D or more efficient than A;

Allow C is less efficient than B and E / order of efficiency is D, B+E, C, A; ECF from part (iii). [3]

(d) **(i)** sulfur dioxide / NO_X; ref. to acid rain in correct context; effects of acid rain on environment, e.g. suppression of crop growth;

carbon dioxide; ref. to greenhouse effect / global warming in correct context; effect of global warming;

soot / carbon particles reduce photosynthesis; [3]

(ii) named river(s); two rivers / rivers join; regular / annual flooding; keeps supply of silt / mud / clay; at a rate more than or equal to extraction; ref. to delta; [2]

(e) **(i)** $10 \times 50 = 500$; [1]

(ii) 2000; (allow ECF from part (i)) [1]

    (iii) some bricks break / poor shape / lost in transit / e.q. / may need more for job / prevent delays / matching bricks; [1]

  (f) keeps people employed; uses local materials / e.q.; cost of imports; keeps cost of development down; brick production can be taxed; brick factories lose sales / AVP; [3]

2 **(a)** **(i)** heaviest rainfall; (in only) 12 wet days; ref. to 2 / 3 months heavy rainfall before / e.q.; so ground saturated / e.q.; rivers already full of water; [2]

    (ii) table drawn; headings (cm / am / pm or 24 hr); data filled in correctly;
(34 30 25 17 10)
(39 28 20 11 6) [3]

   (iii) house one – blocked drains / lower lying land / closer to full river; house 1 surrounded by concrete / paving; house 2 surrounded by soil; [1]

   (iv) bar graph; (both axes labelled) y cm; x district; all plots correct; [4]

    (v) there is no pattern to results / e.q., e.g. varies between districts; comment on range of results (i.e. difference of 36 cm); [1]

  (b) **(i)** P or R; [1]

    (ii) pumping adds oxygen; so animals / fish stay alive; so food web (food chain) is maintained; further detail of food chain, e.g. ref. to producers and consumers; bacteria cannot use up all the oxygen; eutrophication not possible; AVP, e.g. all organisms respire; [4]

  (c) **(i)** residents in built houses; shanty towns; city engineers; politicians; lawyers; two different age groups qualified; two more age groups; males / females; any valid group; [2]

    (ii) to make comparisons / provides unbiased results / valid results; [1]

  (d) strategies – reasonable investments such as more drainage; better rubbish collection; more law enforcement, e.g. planning development; plant more trees; population control; AVP;

    for each explanation of how it could help; further detail; [6]

    AVP = Alternative Valid Point.

[Total: 60]