MARK SCHEME for the October/November 2006 question paper

0654 CO-ORDINATED SCIENCES

0654/05   Paper 5 - Practical, maximum raw mark 45

This mark scheme is published as an aid to teachers and students, 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.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes must be read in conjunction with the question papers and the report on the examination.

The grade thresholds for various grades are published in the report on the examination for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses.

- CIE will not enter into discussions or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the October/November 2006 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

1 **(a)** readings have descending values for both tubes, sharp drop to start, then
more gradual; temperatures for tube **B** reaching much lower than **A**;

    (b) **(i)** suitable scale;
correct plotting of points;
drawing 2 smooth curves; **[3]**

        (ii) **B** **[1]**

        (iii) air is trapped;
air is a poor conductor/good insulator (of heat) **[2]**

    (c) different amounts of water;
different amounts of cotton wool;
different starting temperatures;
no bung;
evaporation from surfaces; **[2 max]**

    (d) **(i)** mammals' temperatures virtually constant whereas the test-tube's
temperature fell; **[1]**

        (ii) oil is removed so water can wet fur/becomes like test-tube **B**;
air no longer trapped so poor insulation; **[2]**

                                                                    [Total: 15]

2 **(a)** **(i)** distance is 70 or 71 mm **[1]**

        (ii)(iii) Table
Values clearly in mm
x values are spaced by 4-6 mm each time
y values decrease as **x** increases **[3]**

    (b) **(i)** Graph
Axes labelled correctly
Sensible scales chosen
Plotting correct
Best straight line. If not straight or line is wrong, lose this mark and give
none for **(b)** part **(ii)** **[4]**

        (ii) y_o correctly determined, see note above re. line
value is between 73 and 75 **[2]**

    (c) **(i)** outline drawn and correctly labelled
cg is correct for candidate's figure **[2]**

        (ii) line correct
measurement is between 124 and 126 mm **[2]**

        (iii) point **M** correctly marked **[1]**

                                                                       [Total: 15]

3 **(a)** solid **A** fizzing/effervescence
solid **B** no reaction or white ppt.

(b) solid **A** no reaction or dissolves
solid **B** red litmus blue, therefore ammonia
solid **C** no reaction   **[4]**

(c) solid **B** no reaction (allow slight white ppt.)
solid **C** white ppt., soluble in excess   **[3]**

(d) solid **A** is an acid because fizzes with sodium carbonate
solid **B** is a base because it liberates ammonia with NH_4^+
solid **C** is a salt because it precipitates with aq. ammonia (or by deduction)   **[3]**

(e) Must use **C**, no ppt. with Ag^+ (ONE) white ppt. for sulphate test (ONE)
Sulphate (ONE)   **[3]**

[Total: 15]