UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2009 question paper

for the guidance of teachers

0652 PHYSICAL SCIENCE

0652/05   Paper 5 (Practical Test), maximum raw mark 30

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

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1 **(a)** recording the refractive index ;

(d) 5 suitable drawings ;
        Give ONE mark if only 4 ;   [2]

    Table
    angles of **i** are about 60, 55, 40, 30 and 20 and **r** values ;
        ONE mark if only 4 values ;   [2]

    angles of **r** decrease appropriately ;   [1]

(e) Graph
        scale ;
        plotting ;
        suitable curve ;   [3]

(f) correctly read from graph ;   [1]

(g) both sines correct, estimating if necessary ;
    if clearly not from the table provided do not allow ratio correctly calculated ;   [2]

(h) suitable comment ; looking for some idea of accuracy of experiment.   [1]

(i) if the refractive index is greater, then angles of refraction would be smaller ; or vice versa
    the denser the medium the greater the ray is bent ;   [2]

                                                                   [Total: 15]

2 **(a)** accept anything between 0.03 and 0.08 ;

(c) results for all three ;
value for **B** is half **A** within 2 drops ;
value for **C** is half **B** within 2 drops ;
value for **C** within 2 drops of Supervisors value ;

if **A** is larger than 20, 2 drops becomes 3 drops   [4]

(d) most concentrated is **A** ;
needs the largest no. of drops ;   [2]

(e) brown <u>ppt</u>. ;   [1]

(f) **(i)** white <u>ppt</u>. ;   [1]

    (ii) dirty white, grey or cloudy (ppt. not necessary here as reaction is slow) ;   [1]

    (iii) green <u>ppt</u>. ;   [1]

(g) one mark for iron(II) and one for sulfate ;   [2]

(h) count drops into a measuring cylinder to suitable volume (at least 5 cm^3) ;
divide by number of drops ;   [2]

[Total: 15]