

**MARK SCHEME for the October/November 2009 question paper
for the guidance of teachers**

0653 COMBINED SCIENCE

0653/05

Paper 5 (Practical Test), maximum raw mark 30

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- 1 (a) good quality of drawings ;
chlorophyll label ; [2]
- (c) leaf **B** and **C** same shape as in part (a) ;
leaf **A** only one containing starch, correctly labelled ; ignore small traces of starch in **B** and **C**
pattern of starch matches chlorophyll pattern in (a) ; [3]
- (d) (leaf **A** starch present)
light and carbon dioxide both needed (for photosynthesis) ;
starch only found where chlorophyll is ;
- leaf **B**
no photosynthesis because carbon dioxide is absent ;
do not allow if stated that water also absent
- leaf **C**
no photosynthesis because light is absent ; [4]
- (e) to remove carbon dioxide ; OWTTE [1]
- [Total: 10]**
- 2 (a) recording the refractive index ; [1]
- (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) [5]
- (e) Graph
scale ;
plotting ;
suitable curve ; [3]
- (f) correctly read from graph ; [1]
- [Total: 10]**

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3 (a) accept anything between 0.03 and 0.08 ; [1]

(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 ; [4]

(d) most concentrated is **A** ;
needs the largest number of drops ; [2]

(e) brown ppt. ; [1]

(f) green ppt. ; [1]

(g) one mark for iron(II) ; [1]

[Total: 10]