

**MARK SCHEME for the October/November 2010 question paper  
for the guidance of teachers**

**0654 CO-ORDINATED SCIENCE**

**0654/51**

Paper 5 (Practical), maximum raw mark 45

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.

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

CIE is publishing the mark schemes for the October/November 2010 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

Page 2	Mark Scheme: Teachers' version	Syllabus	
	IGCSE – October/November 2010	0654	

- 1 (a) (i) entered in Fig. 1.1  
A, B, D blue ;  
C, E purple
- (ii) C and E ; [1]
- (b) (i) entered in Table 1.1  
B, blue / black ;  
A, D brown ; [2]
- (ii) solution B ; [1]
- (c) (i) entered in Table 1.1  
A, blue ;  
D red ; [1]
- (ii) solution D ; [1]
- (d) (i) put starch in two test-tubes and add some of each protein solution ;  
test both solutions with Benedict's reagent ;  
positive result with amylase solution ; [3]
- (ii) red colour with solution C ;  
negative (blue) colour with solution E / no reaction ; [2]
- (iii) any **two** suitable, e.g.  
same amount of each test solution / Benedict's solution ;  
same reaction time for each tube ;  
same temperature ; [max 2]

[Total: 15]

<b>Page 3</b>	<b>Mark Scheme: Teachers' version</b>	<b>Syllabus</b>	
	<b>IGCSE – October/November 2010</b>	<b>0654</b>	

- 2 (a) in Table 2.1  
correct units for current and voltage and power ;  
sensible readings for current and voltage ; (less than 1 A)
- (b) (i) current is about half when both lamps connected ;  
voltage is about the same ; [2]
- (ii) product of p.d. and current is correct for figures ; [1]
- (c) statement fits results ;  
the results confirm the original statement ; [2]
- (d) (i) diagram is correct with 2 lamps in parallel with voltmeter ;  
complete circuit with ammeter in correct place ; [2]
- (ii) reasonable table drawn ; [1]
- (e) (i) current is greater than 1 lamp used ;  
voltage is about the same within 10 % ; [2]
- (ii) product is correct ; [1]
- (f) statement fits results ;  
the results confirm the original statement ; [2]

**[Total: 15]**

Page 4	Mark Scheme: Teachers' version	Syllabus	
	IGCSE – October/November 2010	0654	

- 3 (a) litmus blue ;  
ammonia ; (max 2)  
solid turns white / grey ;  
then brown (black acceptable) ;  
white smoke ;  
litmus red ; (max 3) [max 5]  
(allow reference to sulfur dioxide or trioxide / sublimation in lieu of marks allocated to change of solid)
- (b) litmus blue ; [2]  
ammonia ;
- (c) (i) white precipitate ; [1]  
(ii) accept precipitate so long as it is **not** white ; [1]
- (d) (i) green; [2]  
brown or similar ;
- (ii) blue precipitate **or** dark blue solution ; [1]
- (e) iron(II) ; ammonium ; sulfate ; (**one** mark for each correct) [3]

[Total: 15]