

MARK SCHEME for the May/June 2015 series

0653 COMBINED SCIENCE

0653/61

Paper 6 (Alternative to Practical), 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 May/June 2015 series for most Cambridge IGCSE[®], Cambridge International A and AS Level components and some Cambridge O Level components.

Page 2	Mark Scheme	Syllabus Paper
	Cambridge IGCSE – May/June 2015	065

- 1 (a) (i) outline concave on one side and projections on the other ;
 2 circles shaded and labelled ;
- (ii) xylem ; [2]
 transport of water ;

(b)

test solution	observation	conclusion
Benedict's solution	orange	reducing sugar / glucose (present) ;
biuret solution	blue	protein absent ;
iodine solution	orange	starch absent ;

[3]

(c) Any 3 from 4 [3]

(celery in dyed water and) measure distance dye moves ;

minimum 3 different temperatures ;

time for coloured water to appear at top of (cut) stalk / set time and measure distance moved for each T;

all other conditions / named condition kept constant ;

[Total: 10]

2 (a) 14 and 16 ; [1]

(b) (i) 0.7(0) 0.8(0) ; [3]

0.49 and 0.64 ;

T² to 2 d.p. ;

Allow ecf

(ii) 4 plots correct $\pm 1/2$ small square ; [2]
 best fit straight line through origin $\pm 1/2$ small square ;

(iii) gradient shown clearly on graph (triangle at least 1/2 of graph); [2]
 1.6 ;

(iv) 39.5 / gradient from (b)(iii) = 25 ; [2]
 quoted to 2 sig figs ;

[Total: 10]

- 3 (a) (i) blue/purple **AND** (pH between) 8 to 14 ;
(ii) calcium hydroxide/limewater ;
calcium oxide ;
- (b) (i) (sodium hydroxide) (light) blue ppt ; [3]
(ammonia) (light) blue ppt ;
(ammonia) dark blue solution (in excess) ;
- (ii) CuO (not name) ; [1]
- (c) react with (e.g.) sulphuric acid ; [3]
add sodium hydroxide (soln)/ ammonia (soln) ;
white ppt (dissolves in excess) ;

[Total: 10]

- 4 (a) (i) **A** white blood cell ; [4]
B red blood cell ;
C platelet ;
D plasma ;
- (ii) 8 ; [1]
- (iii) 0.008 ; ; [2]
ecf

(b) (i)

activity	average pulse rate for 15 seconds	average heart rate (beats per minute)
resting	17	68
jogging	35	140

[1]

- (ii) heart rate increases ; [max 1]
increased or faster blood flow ;
need more oxygen/respiration/removal of carbon dioxide ;
- (iii) average calculated/identify anomalies/confirms similar values/repeats ; [1]

[Total: 10]

5 (a) use of cell / battery / power supply and connections ;

connect in circuit ;

(first two marks can be from a diagram)

lamp works if lamp lights ;

(b) ammeter symbol correct and in series with lamp;

[3]

voltmeter symbol correct and in parallel with lamp ;

circuit ;

(c)

[3]

(lamp)	eg A	B	C	D	E
current / A					
potential difference / V					

table with headings (allow p.d.) ;

correct units (allow name or symbol) ;

room for 5 lamps may be labelled with letters, numbers or not at all ;

(d) resistance = potential difference (voltage) / current ;

[1]

[Total: 10]

6 (a) hydrogen ;
lighted splint ;
pop (etc.) ;

[3]

(b) conical flask with delivery tube ;
(connected to) syringe or measuring cylinder over water ;

[2]

(c) (i) rate decreases ;
(then) stops ;

[2]

(ii) Mg or acid or reactant(s) used up / all Mg or acid or reactant reacted ;

[1]

(d) line T to left of original ;
line T reaches same height. ;

[2]

[Total: 10]