Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Education

PHYSICAL SCIENCE **0652/05**

Paper 5 Practical Test **For examination from 2019**

MARK SCHEME

Maximum Mark: 40

Specimen

This document consists of **6** printed pages.

CAMBRIDGE International Examinations

Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

mark scheme abbreviations

;	separates marking points
/	alternative responses for the same marking point
not	do not allow
allow	accept the response
ignore	mark as if this material was not present
ecf	error carried forward
avp	any valid point
ora	or reverse argument
owtte	or words to that effect
underline	actual word given must be used by candidate (grammatical variants excepted)
( )	the word/phrase in brackets is not required but sets the context
max	indicates the maximum number of marks
any [number] from:	accept the [number] of valid responses
note:	additional marking guidance

[Turn over

Question	Answer	Marks	Guidance
1(a)(i)	white ppt. ; ppt. dissolves / ppt. soluble in excess / colourless solution formed ;	**2**	
1(a)(ii)	Zn^{2+} / zinc / zinc (II) ;	**1**	not: Zn ecf: this mark is linked to one correct observation in **(a)(i)**
1(b)(i)	filtrate: green / turquoise / blue ; residue: brown / black / grey ;	**2**	award 1 mark max if colours reversed
1(b)(ii)	(light) blue ppt. ; dark(er) blue solution / deep blue solution / dissolves to give dark blue (solution) ;	**2**	
1(b)(iii)	Cu^{2+} / copper / copper (II) ;	**1**	not: Cu
1(c)(i)	add aqueous sodium hydroxide / aqueous ammonia solution ;	**1**	
1(c)(ii)	red-brown ppt. (insoluble in excess) ;	**1**	

Question	Answer	Marks	Guidance
2(a)(i)	initial temperature (of water) recorded to nearest 0.5 °C ;	**1**	
2(a)(ii)	sensible temperature increase recorded ;	**1**	note: see supervisor's results
2(a)(iii)	sensible temperature decrease recorded ;	**1**	note: see supervisor's results
2(a)(iv)	sensible temperature recorded (slight or no change) ;	**1**	note: see supervisor's results
2(b)	all temperature changes and signs correct ;	**1**	
2(c)	no repeats ; temperature changes very small ;	**2**	avp
2(d)(i)	labelled table ;	**1**	

Question	Answer	Marks	Guidance
2(d)(ii)	<table><tr><td></td><td>aqueous barium nitrate</td><td>aqueous silver nitrate</td></tr><tr><td>observation</td><td>no reaction</td><td>white ppt</td></tr><tr><td>conclusion</td><td>not sulfate</td><td>chloride present</td></tr></table> **or** <table><tr><td></td><td>observation</td><td>conclusion</td></tr><tr><td>aqueous barium nitrate</td><td>no reaction</td><td>not sulfate</td></tr><tr><td>aqueous silver nitrate</td><td>white ppt</td><td>chloride present</td></tr></table> both observations ; both conclusions ;	**2**	

Question	Answer	Marks	Guidance
3(a)(i)	current I recorded < 1 A , and to 2 s.f. ;	**1**	
3(a)(ii)	both values present with l = 10.0 cm and V less than 1 V ;	**1**	
3(a)(iii)	R value correct for l = 10 cm and to 0.1 Ω ;	**1**	
3(a)(iv)	all V recorded ; V values increasing (for increasing length) ; consistent two or three significant figures for R ;	**3**	
3(a)(v)	so that the wire does not become hot / as battery or cell may run down ;	**1**	allow: because resistance of wire may increase
3(b)(i)	vertical axis labelled with sensible linear scale and more than half of the grid ; at least four plots correct to ±½ small square ;	**2**	
3(b)(ii)	good best fit straight line judgement ;	**1**	
3(c)	relationship: R proportional to l ; justification: straight line through the origin ;	**2**	

[Turn over

Question	Answer	Marks	Guidance
4(a)(i)	21° ± 2 or 69° ± 2 ;	**1**	
4(a)(ii)	0.54 ;	**1**	
4(b)	**apparatus** apparatus to measure volume / mass / weight / height ; **method – max 3** minimum of 5 different volumes / masses / weights / heights of water ; range of volumes / masses / weights / heights ; repeats ; tip bottle slowly ; cap on bottle ; **measurements and processing – max 2** force or angle or other measured to just tip ; averaging ; graph of measured variable against volume of water ; **use of results** highest measure of variable has greatest stability / graph explained in terms of stability ;	**6**	max 6 in total note: to gain 6 marks at least 1 mark must come from each: • apparatus • method • measurements and processing • use of results