

Mark Scheme (Results)

November 2009

IGCSE

IGCSE Physics (4420) Paper 03
IGCSE Science (Double Award) (4437) Paper 09

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Abbreviations used in mark schemes:

ecf error carried forward

dop dependent on previous

Question Number	Acceptable Answers	Extra Information	Mark
1 (a)(i)	<i>series circuit including:</i> power supply ammeter bulb		1 1 1
1 (a)(ii)	Method 1. switch on 2. wait 8 hours 3. read ammeter 4. repeat for other power supplies	Any three	1 1 1
1 (b)	0.24 - 0.25		1
1 (c)	both 1.5 V cells circled 9 V is too much power supply not portable		1 1 1
1 (d)	parallel across bulb.		1
1 (e)	cut out daylight / only considering light from bulb		1

(Total 12 marks)

Question Number	Acceptable Answers	Extra Information	Mark
2 (a)(i)	1		1
2 (a)(ii)	other readings will be less than the mass in air		1
2 (a)(iii)	68		1
2 (b)(i)	1 and 2		1
2 (b)(ii)	object needs to be fully immersed		1
2 (b)(iii)	85 – 73 = 12		1 1

Question Number	Acceptable Answers	Extra Information	Mark
2 (c)(i)	<u>68</u> / 12 = 5.7 or 5.67 or 5.666 etc 2 or 3 s.f.	68/6 = 11.3 68/4 = 17.0 allowed as ecf	1 1 1
2 (c)(ii)	relate to raw data		1

Question Number	Acceptable Answers	Extra Information	Mark
2 (d)	too full / reads 96 (cm ³) immersed object would take reading above 100 where there are no markings/water overflows	scores both marks	2

Question Number	Acceptable Answers	Extra Information	Mark
2 (e)(i)	measure l b w l x b x w		1 1

Question Number	Acceptable Answers	Extra Information	Mark
2 (e)(ii)	rule		1

(Total 16 marks)

Question Number	Acceptable Answers	Extra Information	Mark
3 (a)(i)	label normal		1

Question Number	Acceptable Answers	Extra Information	Mark
3 (a)(ii)	64		1
3 (a)(iii)	41		1
3 (b)	Raybox / laser / torch <u>with slit</u>		1

Question Number	Acceptable Answers	Extra Information	Mark
3 (c)(i)	plotted points	-1 for each misplot	2
	label axes (with units)		1
3 (c)(ii)	circle (70,34)		1
3 (c)(iii)	curve		1
3 (c)(iv)	should be 34 not 43		1

(Total 10 marks)

Question Number	Acceptable Answers	Extra Information	Mark
4 (a)	32		1

Question Number	Acceptable Answers	Extra Information	Mark
4 (b)(i)	more than 2 ½ minutes		1
4 (b)(ii)	temperature is not steady dop		1

Question Number	Acceptable Answers	Extra Information	Mark
4 (c)(i)	stand stopwatch ruler three more (identical) thermometers tripod heat resistant gloves	Any two	1 1
4 (c)(ii)	temperature of water distance of thermometer from cube time at which temperature taken room temperature	Any two	1 1
4 (c)(iii)	place thermometer close to one side note temp repeat for other sides		1 1 1
4 (d)(i)	too near flame		1
4 (d)(ii)	place thermometer further from flame measure heat flow rather than temperature	Any one	1

(Total 12 marks)

PAPER TOTAL: 50 MARK

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