



Mark Scheme (Results)

January 2015

International GCSE Physics (4PH0 2P)

Question number	Answer	Notes	Marks
4 (a) (i)	18.7 ± 0.5 (cm);	accept any value between 18.2 and 19.2	1
(ii)	Any two of - MP1 Mention of <u>parallax</u> error; MP2 Idea of zero error; MP3 End of ruler is worn; MP4 Hook is curved; MP5 Hook stretches bands to different lengths; MP6 Bands are not close to ruler; MP7 Bands are not parallel to ruler; MP8 Bands are twisted;	Ignore human error Ignore inaccurate scale Ignore anomaly, no average, references to Hooke's law	2
(b)	Idea of a controlled variable; e.g. force kept constant temperature kept constant	Allow properties of bands, e.g. type, brand, material, thickness, elasticity, original length Ignore idea of consistent technique, e.g. using same equipment	1

Question number	Answer	Notes	Marks
5 (a)	- 268.8 (°C);	Minus sign is essential Allow - 269(°C) - 268.95 (°C)	1
(b) (i)	Any two of - MP1 idea that molecules move faster; MP2 idea that molecules become further apart; MP3 idea that molecules move more freely;	Must be comparative statements relating to boiling Allow increased KE increased vibration Allow (for "freely") idea that forces between molecules have been overcome Ignore ideas of bonding	2
(ii)	Straight line with positive slope; Aimed at origin;	Allow line passing through origin, stopping short or dropping to θ axis at "4.2 K"	2
(c)	Any four of - MP1 Appropriate instrument to measure temperature; MP2 Appropriate instrument to measure volume or length or tube diameter; MP3 Means of varying temperature; MP4 consideration of diameter and volume; MP5 Idea of obtaining a range of values; MP6 Idea of repetition or averaging of readings; MP7 Draw a graph to display results; MP8 Mention of kelvin temperature;	Points may be shown as labelled additions to the diagram e.g. ruler e.g. water bath / heater Allow treatment of anomalies	4

Total 9 marks