

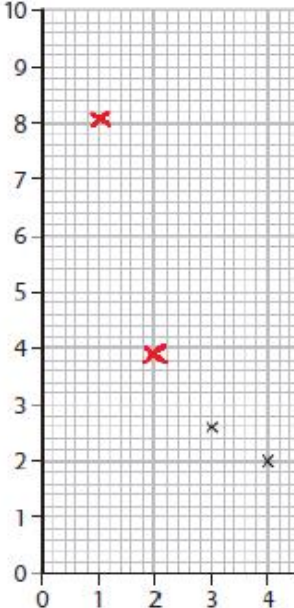
Name of the Student: _____

Max. Marks : 16 Marks

Time : 16 Minutes

Mark Schemes

Q1.

Question number	Answer	Additional guidance	Mark
i	 One mark for each point plotted correctly, to within ± 1 small square		(2) AO2

Question number	Answer	Additional guidance	Mark
ii	smooth curve drawn fitting the plotted points (1)	judge by eye	(1) AO2

Question number	Answer	Additional guidance	Mark
iii	substitution using an attempt at calculation – any subtraction seen (1) e.g. $2(.0) - 1(.0)$ evaluation (1) (-) $1(.0)$ (mT)	accept any number that rounds to 1.0 award full marks for correct answer without working	(2) AO3

Question number	Answer	Mark
iv	(size of) current	(1) AO1

Q2.

Question number	Answer	Additional guidance	Mark
(i)	An answer that provides a description by making reference to: - concentration/density (of iron filings) (1) - greatest at strongest field (1)	(filings) close together / bunched up	(2)

Question number	Answer	Mark
(ii)	An answer that combines the following points to provide a logical description of the method: - use of (plotting) compass(es) (1) (place) at various different points (around the magnet) (1) - the direction is the way the compass points (1)	(3)

Q3.

Question Number:	Answer	Additional guidance	Mark
	a description to include: use a compass (1) always points in the same direction / will point north (1)	accept reasonable alternatives such as suspended magnet needles on cork in water	(2) AO 3 2a

Q4.

Question number	Answer	Additional guidance	Mark
(i)	(magnetic field) {lines / circles / pattern} closer (together at P) (1)	(magnetic field) lines more concentrated (at P) (magnetic field) lines further apart / less concentrated at Q ignore idea that P is closer (to the wire than Q)	(1) AO1
Question number	Answer	Additional guidance	Mark
(ii)	a description to include as current increases magnetic field strength increases (1) linear/ increases in even steps / doubling idea / proportional (1)	allow positive correlation 'directly proportional' scores 2 marks	(2) AO3