Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic : 12_Magnetism and the motor effect

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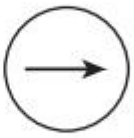
Name of the Student:_____
Max. Marks : 17 Marks **Time : 17 Minutes**

Mark Schemes

Q1.

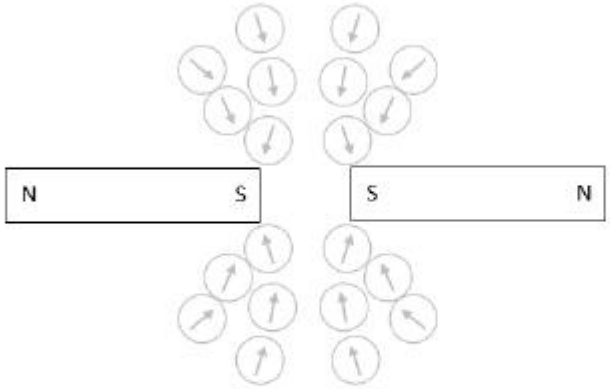
Question Number	Answer	Mark
(i)	**The only correct answer is A**  **B is incorrect** because it is not tangential to the (circular) magnetic field lines produced by the current **C is incorrect** because it is not tangential to the (circular) magnetic field lines produced by the current **D is incorrect** because it is not tangential to the (circular) magnetic field lines produced by the current	(1)

Question Number	Answer	Additional guidance	Mark
(ii)	A description of the method that includes: **EITHER** (using single compass) record field at one location (1) find how field continues (1) connect the dots (to reveal overall shape of field / line) (1) **OR** arrange multiple compasses (1) over all of the card (1) direction of (all of) the compass needles indicates shape of field (1)	Marking points may be awarded from a diagram. mark where compass points **or** put dots at each end of needle / arrow move compass to new position / until needle over previous dot start from different position and repeat (idea of obtaining concentric circles) all the way round the wire	**(3)**
	OR sprinkle iron filings on card (before current is switched on) (1) switch on current/ tap card (1) pattern produced indicates shape of field (1)	 allow iron filings to arrange themselves	

Q2.

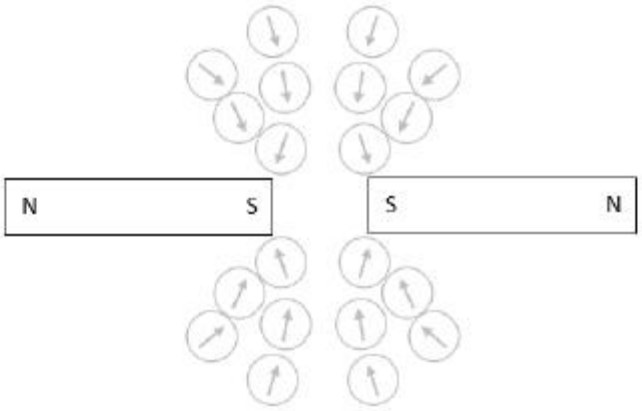
Question number	Answer	Additional guidance	Mark
	Any three from: • use a higher current as the force depends on the current (1) • use more/stronger/larger range of magnets (1) • use a force meter with smaller range, e.g. 0.00 to 0.01 (1) • use a longer distance from pivot to increase the moment of the force on the wire (1)	accept voltage for current add variable resistor (in series) with power supply accept use more sensitive force meter	**(3)**

Q3.

Question number	Answer	Additional guidance	Mark
(i)	example:  rectangles in (approximately) correct position (1) all four poles correctly labelled (1)	judge by eye but do not allow rectangles in contact	(2) AO3

Question number	Answer	Additional guidance	Mark
(ii)	a description to include place a (plotting) compass on the paper (near to the magnet(s)) and mark direction of the field (at that point) (1) determine how the field continues from that point (1) connect field lines to reveal overall shape(1)	 place a (plotting) compass on the paper (near to the magnet(s)) and put a dot at each end of the needle move compass so that one end of the needle is over the mark (just made) join up the dots	(3) AO1

Q4.

Question number	Answer	Additional guidance	Mark
(i)	example:  rectangles in (approximately) correct position (1) all four poles correctly labelled (1)	judge by eye but do not allow rectangles in contact	**(2)** **AO3**

Question number	Answer	Additional guidance	Mark
(ii)	a description to include place a (plotting) compass on the paper (near to the magnet(s)) and mark direction of the field (at that point) (1) determine how the field continues from that point (1) connect field lines to reveal overall shape(1)	 place a (plotting) compass on the paper (near to the magnet(s)) and put a dot at each end of the needle move compass so that one end of the needle is over the mark (just made) join up the dots	**(3)** **AO1**