

Name of the Student: _____

Max. Marks : 17 Marks

Time : 17 Minutes

Mark Schemes

Q1.

(a) induced 1

(b) bar 2 1

(the same end) of bar 1 attracts both ends of bar 2

or

only two magnets can repel so cannot be bar 1 or bar 3 1

(c) so the results for each magnet can be compared

or

so there is only one independent variable

fair test is insufficient

allow different thickness of paper would affect number of sheets each magnet could hold

accept it is a control variable

1

(d) because the magnet with the biggest area was not the strongest

accept any correct reason that confirms the hypothesis is wrong eg smallest magnet holds more sheets than the largest

1

[5]

Q2.

(a) field correct order only 1

current 1

force accept motion accept thrust 1

(b)	(i)	arrow pointing vertically downwards	1
	(ii)	increase current / p.d. <i>accept voltage for p.d.</i>	1
		increase strength of magnetic field <i>accept move poles closer together</i>	1
	(iii)	reverse (poles of) magnets	1
		reverse battery / current	1
(c)	(i)	1.5 or 150% $efficiency = 120 / 80 (\times 100)$ <i>gains 1 mark</i> <i>an answer of 1.5 % or 150</i> <i>gains 1 mark</i>	2
	(ii)	efficiency greater than 100% or output is greater than input or output should be 40 (W)	1
	(iii)	recorded time much shorter than actual time <i>accept timer started too late</i> <i>accept timer stopped too soon</i>	1

[12]