

Question number	Answer	Notes	Marks
6 (a)	<p>solenoid / coil (of wire);</p> <p>(direct/d.c.)current in the wire/coil/solenoid;</p>	<p>all ideas may be shown on diagram</p> <p>e.g. labelled wire wrapped multiple times around a box shape on diagram</p> <p>condone idea of connection to a voltage source e.g. battery, powerpack, cell etc</p> <p>ignore alternating current / a.c.</p>	3
	(soft) iron core;	<p>ignore steel</p> <p>accept 'magnetically soft material'</p> <p>reject indication of a complete (iron) loop</p> <p>reject explicit reference to bar magnet</p>	
(b) (i)	idea of upwards/ towards top of page;	<p>may be shown on diagram</p> <p>ignore 'north'</p>	1
(ii)	<p>any TWO from:</p> <p>force (always) at right angles (to velocity);</p> <p>causes the proton's direction to change;</p> <p>(because) proton motion is equivalent to a current;</p> <p>(this causes) the direction of the force on the proton to change;</p> <p>idea of magnitude of force is constant;</p>	<p>may be shown on the diagram</p>	2
(iii)	(velocity changes because) the direction changes;	<p>ignore idea of speed or magnitude of velocity changes</p>	1

Total for Question 6 = 7 marks