Question number			Answer	Notes	Marks
3	(a)	(i)	newtonmeter;	allow spring balance, spring scale, dynamometer ignore forcemeter	1
		(ii)	independent: material (of the squares);	allow cloth ignore 'squares' on its own	2
			dependent: force;		
		(iii)	any one from: • speed (of rotation); • direction of rotation; • temperature (of tumble dryer); • number of squares; • size / thickness / shape of square; • time (of rotation);		1
	(b)		any three from: MP1. idea of friction (between pieces of material); MP2. electrons/charge transferred between squares/material; MP3. squares become oppositely charged; MP4. square is negative if electrons gained; MP5. idea that opposite charges attract;	allow rubbing for friction ignore references to protons allow negative and positive squares/eq allow RA	3
	(c)		bar chart; idea that material/data is categoric;	allow bar graph ignore histogram allow discrete, not continuous, discontinuous	2
	(d)	(i)	charge = current × time (taken);	allow standard symbols and rearrangements e.g. Q = I × t ignore c, C for charge and current	1
		(ii)	substitution; evaluation; e.g. Q = $4.3 \times 10^{-6} \times 2.3 \times 10^{-3}$ (Q =) 9.9×10^{-9} (C)	-1 for POT error allow use of prefixes e.g. 9.9 nC allow 9.89×10^{-9} (C)	2

Total for Question 3 = 12 marks