Question number			Answer	Notes	Marks
3	(a)	(i)	power = voltage x current;	Accept rearrangements and symbols e.g. current = power ÷ voltage, P=IV, I=P/V ignore a triangle mnemonic an eqn in units	1
		(ii)	2.9 (A);	Accept 2.92 (A), 2.916 (A)	1
	(b)	(i)	Any **three** of : MP1. if current gets too high/exceeds 13A or a set value; MP2. fuse (wire) melts / breaks; MP3. breaking circuit / switching off; MP4. prevents cable over heating;	allow: fuse blows stops current /flow of electrons	3
		(ii)	any **one** of: MP1. cable can't be fully extended; MP2. limits the use of the extension cable; MP3. can't exceed 1200 W; MP4. can't reach 10.0 (A) / max working value/eq; **AND** (because otherwise) 5 A fuse will blow/ will cut the power;	allow RA ignore vague comments re energy or power being too much or too high	2
		(iii)	(to prevent) the cable overheating/OWTTE;		1

Total 8 marks

Question number			Answer	Notes	Marks
8	(a)		Substitution into **correct** equation; Calculation; e.g. - 1.3 x 10.3 x 4.7; 63 (J);	No credit for merely quoting the equation as $E = IVt$ is given on p2. 62.9 (J)	2
	(b)	(i)	Work done = force x distance moved (in the direction of the force);	Accept rearrangements and symbols e.g. force = $\underline{\text{work}}$ 　　　　　distance W = F x d F = W/d	1
		(ii)	Substitution into **correct** equation; Calculation; e.g. - Work done = 20 x 0.85; 17 (J);		2
		(iii)	Value given in 8(b)(ii);	Allow GP(E)	1
	(c)	(i)	Efficiency = useful energy output divided by total energy input;	Accept efficiency in terms of work or power and percentage e.g. Efficiency = (work out / work in) x 100 %	1
		(ii)	17 divided by 63; 0.27;	Allow ecf answer from b(ii) [or (b)(iii)] divided by answer from (a) Allow 27%	2

Total 9 marks