Question	Answers / Explanatory notes	Marks available
2. *(a)*	All symbols present / correct [accept cell for power supply] (1) Ammeter in series and voltmeter in parallel. (1)	2
(b)	Reading correct to 2 d.p. with units.	1
(c)	Table: Minimum of 5 readings (1) Headings correct, with units (1) Suitable range consistent with max/min readings (1) All readings to 1-2 d.p. all to 0·01 (1)	4
(d)	Graph: Headings and units on axes – correct alignment (1) Suitable scales chosen (1) Allpoints correctly plotted (1) Smooth curve drawn from (0,0) (1)	4
(e) (i)	Tangent drawn [Δ if a straight line] (1) Gradient calculated correctly (1) Resistance correct (1/gradient) (1)	3
(ii)	R calculated using $R = \frac{V}{I}$ (not tangent) (1) } (ignore s.f.'s)	
	Units correct in either (i) or (ii)(1)	2
	Resistance increases – e.c.f. from (i) and (ii) (1) Filament heats up (1)	2
(f) (i)	Straight line (through the origin)	1
	Lower gradient – e.c.f. if axes incorrect orientation	1
		[20]