Question Number	Answer		Mark
11(a)	Calculates total charge Use of $I = \Delta Q/\Delta t$ $I = 1.28$ (A) (MP3 – allow minus sign on answer) <u>Example of calculation</u> Total charge = $4.80 \times 10^{20} \times 1.60 \times 10^{-19}$ C = 76.8 C $Q = It$, so I = 76.8 C / 60 s = 1.28 A	**(1)** **(1)** **(1)**	**3**
11(b)	Use of $V = W/Q$ **or** $W = VIt$ Potential difference = 0.31 V (e.c.f. from (a)) OR Use of $P = W/t$ and $P = VI$ Potential difference = 0.31 V (e.c.f. from (a)) (“show that” value also gives 0.31 V) (allow answer of 0.3V) (e.c.f. can be for I or Q value from (a)) <u>Example of calculation</u> $V = W / It$ = 24 J / (1.28 A × 60 s) = 0.31 V	**(1)** **(1)** **(1)** **(1)**	**2**
	Total for question 11		**5**