

Q1.

Question	Answer	Additional guidance	Mark
	substitution (1) (current =) $\frac{1.2}{4(0)}$ evaluation (1) (current =) 0.3(0) (A)	award full marks for the correct answer without working	(2) AO2.2

Q2.

Question Number	Answer	Additional guidance	Mark
	substitution (1) (Q=) 0.9×50 evaluation (1) 45 unit (1) coulomb	award 2 marks for the correct answer without working If no substitution seen 4.5 or 450 scores 1 mark only independent mark C, c, As Accept recognisable spellings of coulomb	(3)

Q3.

Question Number	Answer	Mark
	<p>The only correct answer is A $\text{time} = \frac{\text{charge}}{\text{current}}$</p> <p><i>B, C and D are incorrect expressions not yielding time as the subject of an equation e.g. B would be 'Coulomb Amps', not recognisable as a physical quantity. Similar arguments for C and D</i></p>	(1) AO1.1

Q4.

Question Number	Answer	Acceptable answers	Mark
	<p>Conversion to correct units: 120 seen anywhere (1)</p> <p>Substitution: 0.08×120 (1)</p> <p>Evaluation: 9.6 (C) (1) accept 10 C</p>	<p>Allow full marks for correct answer with no working seen.</p> <p>0.08×2 gains 1 mark for sub of their time into correct eq'n 0.16 (C) gains 2 marks (only mistake is not converting time to seconds)</p> <p>accept any power of 10 error for 2 marks e.g. 960 (C)</p>	(3)

Q5.

	Answer	Acceptable answers	Mark
	<p>substitution (1) 3.7×13 evaluation (1) 48 (C)</p>	<p>48.1 Correct answer with no calculation scores 2 marks</p>	(2)

Q6.

Question number	Answer	Additional guidance	Mark
(i)	B electrons A C and D are incorrect because they do not move through a conductor to create an electric current.		(1) AO1

Question number	Answer	Additional guidance	Mark
(ii)	substitution (1) (charge =) 0.21×300 evaluation (1) (charge =) 63 unit (1) coulombs	award full marks for the correct answer without working independent mark C(oulombs) C As	(3) AO2 AO1

Q7.

Question number	Answer	Additional guidance	Mark
i	A an ammeter B, C and D are incorrect because they do not show current		(1)

Question number	Answer	Additional guidance	Mark
ii	substitution (1) $(Q) = 2.5 \times 8 \times 60$ evaluation (1) 1200 (C)	allow 20 (C) for 1 mark award full marks for the correct answer without working	(2)

Q8.

Question number	Answer	Additional guidance	Mark
(i)	substitution (1) $(\text{charge}) = 0.46 \times 30$ evaluation (1) $(\text{charge}) = 14 \text{ (C)}$	any number that rounds to 14 e.g. 13.8 award full marks for the correct answer without working	(2) AO2

Q9.

Question Number:	Answer	Additional guidance	Mark
(iii)	substitution (1) $(Q)=0.13 \times 35$ evaluation (1) 4.6 (C)	accept an answer that rounds to 4.6 e.g. 4.55 or in this context allow 4.5 power of ten error is awarded 1 mark award full marks for the correct answer without working	(2) AO 2 1

Q10.

Question Number:	Answer	Additional Guidance	Mark
(ii)	recall and substitution (1) $42 = \frac{200 \times t}{(1000)}$ rearrangement (1) $t = \frac{42 (\times 1000)}{200 (\times 60)}$ evaluation (1) (t =) 3.5 (minutes)	accept substitution and rearrangement in either order 2.1 to any power of 10 or 3.5 to any power of 10 scores 2 marks 3 minutes 30 seconds award full marks for correct answer without working	(3) AO 1 1 AO 2 1