Electrical Quantities MCQ QP 2

1 During a thunderstorm, a flash of lightning resulted in 600 000 C of charge flowing in a lightning conductor in a time of 40 ms. The current in the conductor was

- ☒ **A** 1.5×10^4 A
- ☒ **B** 2.4×10^4 A
- ☒ **C** 1.5×10^7 A
- ☒ **D** 2.4×10^7 A

2 The unit of potential difference can be expressed as

- ☒ **A** $C\ s^{-1}$
- ☒ **B** $J\ C^{-1}$
- ☒ **C** $A\ \Omega^{-1}$
- ☒ **D** $J\ A^{-1}$

3 Which of the following quantities is shown with the correct unit?

- ☒ **A** current and C s
- ☒ **B** potential difference and eV
- ☒ **C** power and J s
- ☒ **D** resistivity and Ω m

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4 The amount of electrical energy transferred when a charge of 8 mC moves through a potential difference of 12 V is

- ☒ **A** 1500 J
- ☒ **B** 96 J
- ☒ **C** 9.6×10^{-2} J
- ☒ **D** 6.7×10^{-4} J

5 Which of the following can be used as a unit of electrical resistance?

☒ **A** $W A^{-2}$

☒ **B** $A V^{-1}$

☒ **C** $W V^{-2}$

☒ **D** $V C^{-1}$

6 The drift velocity v of electrons in a conductor is directly proportional to

☒ **A** electron charge.

☒ **B** charge carrier density.

☒ **C** cross-sectional area.

☒ **D** current.

7 The resistance of a length of copper wire is 6 Ω. A second piece of copper wire has twice the length and twice the cross-sectional area. The resistance of the second piece of copper wire is

☒ **A** 3 Ω

☒ **B** 6 Ω

☒ **C** 12 Ω

☒ **D** 24 Ω

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8 A resistor is connected to a cell. An amount of charge Q passes through the resistor in a time t. During this time, the amount of chemical energy converted to electrical energy by the cell is E.

Select the row of the table which correctly gives the current in the resistor and the e.m.f. of the cell.

		Current	**e.m.f.**
☒	**A**	Q/t	EQ
☒	**B**	Qt	EQ
☒	**C**	Q/t	E/Q
☒	**D**	Qt	E/Q