E2.2

UNIT E2 · WORKSHEET

Ohm’s law

UNIT PROGRESS

Core BUILD THE BASICS

C1 **State** Ohm's law as a formula. **[1]**

C2 V = 12 V, R = 6 Ω. **Calculate** I. **[2]**

C3 I = 0.5 A, R = 10 Ω. **Calculate** V. **[2]**

C4 V = 6 V, I = 3 A. **Calculate** R. **[2]**

C5 V = 24 V, R = 8 Ω. **Calculate** I. **[2]**

C6 I = 2 A, R = 15 Ω. **Calculate** V. **[2]**

C7 V = 9 V, I = 0.3 A. **Calculate** R. **[2]**

Stretch GO FURTHER

S1 V = 5.0 V, R = 1.0 kΩ. **Calculate** I. **[2]**

S2 I = 20 mA, V = 9.0 V. **Calculate** R. **[2]**

Ohm's law

S3 I = 2.5 mA, R = 4.7 kΩ. **Calculate** V. **[2]**

S4 I = 12 mA, R = 2.2 kΩ. **Calculate** V. **[2]**

S5 Use the 4 kΩ line on the graph. **State** the current at 8 V. **[1]**

S6 **Calculate** the resistance shown by the steeper line on the graph. **[2]**

Exam Ready QUALIFICATIONS SCOTLAND STYLE

E1 A ski-lift motor control resistor has 24 V across it and a current of 1.2 A. **Calculate** its resistance. **[2]**

E2 A 12 V LED strip draws 0.25 A. **Calculate** its resistance. **[2]**

E3 The supply voltage to a fixed resistor is increased. **Explain** the effect on the current. **[2]**

E4 A heater element in a fish tank (Kirkton Growers, fictional) has 12 V across it and 1.5 A through it. **Calculate** its resistance. **[3]**

E5 **Describe** how the current changes if the resistance doubles and the voltage stays the same. **[1]**

Total: 34 marks. Use the Data Booklet. Show your working and give units.