



Oxford Cambridge and RSA

## Level 3 Cambridge Technical in Applied Science

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### Data Sheet

**Unit 1** Science fundamentals

**Unit 2** Laboratory techniques



#### INSTRUCTIONS

- Do **not** send this Data Sheet for marking. Keep it in the centre or recycle it.

#### INFORMATION

- This document has **2** pages.

**Unit 1**

Density ( $\text{kg/m}^3$ ) = mass (kg)  $\div$  volume ( $\text{m}^3$ )

Current (A) = number of electrons per  $\text{m}^3$   $\times$  cross-sectional area of conductor ( $\text{m}^2$ )  $\times$  drift velocity ( $\text{m s}^{-1}$ )  $\times$  electron charge (C)

$I = \Delta Q \div \Delta t$

Potential difference (V) = current (A)  $\times$  resistance ( $\Omega$ )

Charge (C) = current (A)  $\times$  time (s)

Power (W) = energy (J)  $\div$  time (s)

Power (W) = potential difference (V)  $\times$  current (A)

Energy transferred (work done) (J) = charge (C)  $\times$  potential difference (V)

Energy transferred (J, kWh) = power (W, kW)  $\times$  time (s, h)

Area of a circle =  $\pi r^2$

Circumference of a circle =  $2\pi r$

Current flow:

Series  $R_t = R_1 + R_2 + R_3$

Parallel  $\frac{1}{R_t} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$

**Unit 2**

$n = c \times V$

where:

$c$  = concentration ( $\text{mol dm}^{-3}$ )

$n$  = number of moles

$V$  = volume ( $\text{dm}^3$ )

Magnification = measured size  $\div$  actual size

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