

- 5 The variation with potential difference (p.d.) V of the current I in a lamp is shown in Fig. 5.1.

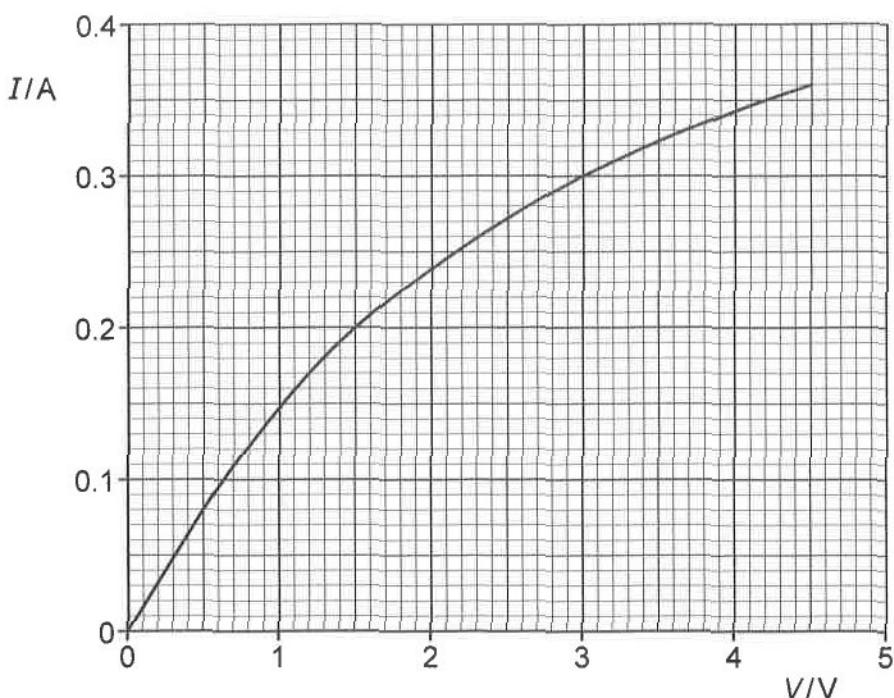


Fig. 5.1

- (a) Calculate the change in resistance of the lamp for a change in p.d. from $V = 1.5\text{ V}$ to $V \approx 3.0\text{ V}$.

$$\text{resistance change} = \dots \Omega [2]$$

- (b) The lamp is connected into the circuit shown in Fig. 5.2.

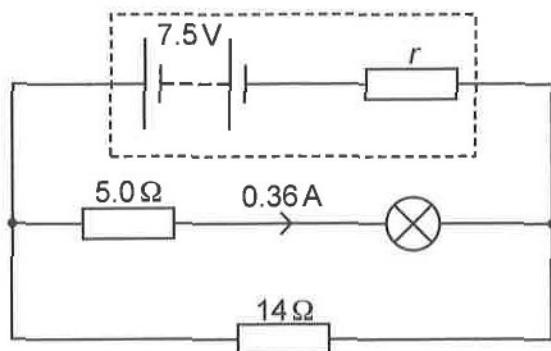


Fig. 5.2





The battery in the circuit has an electromotive force (e.m.f.) E of 7.5 V and internal resistance r .

The current in the resistor of resistance 5.0Ω is 0.36 A.

Determine:

- (i) the current in the resistor of resistance 14Ω

current = A [2]

- (ii) the internal resistance r of the battery.

r = Ω [2]

[Total: 6]

