

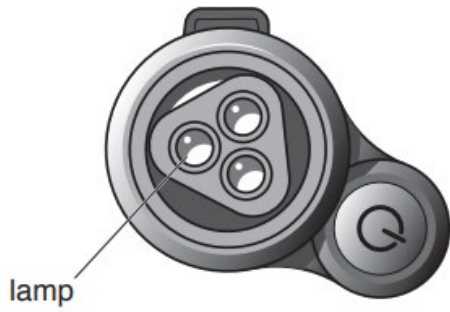


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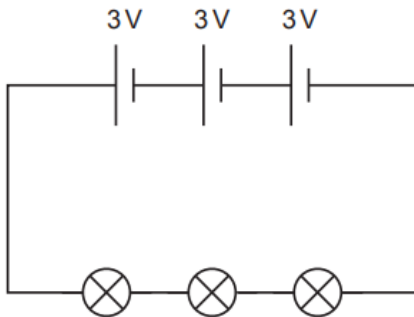
GCSE Physics B (Twenty First Century Science)
J259/03 Depth in physics (Higher Tier)

Question Set 19

- 1 Kai is designing a head torch. The torch uses three small lamps.



The series circuit for Kai's first design is shown in **Circuit A**.



Circuit A

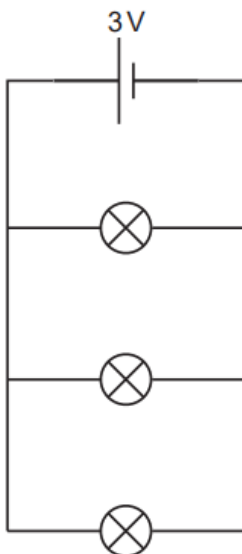
- (a) The resistance of each bulb is $2800\ \Omega$.

Calculate the current in **Circuit A**.

Give your answer to **2** significant figures.

Current = A **[4]**

- (b) Kai changes the circuit so that it now contains only one cell, but with the lamps wired together in parallel, as shown in **Circuit B**.



Circuit B

(i) Describe and explain how the brightness of the lamps in **Circuit A** compares to the brightness of the lamps in **Circuit B**.

[2]

(ii) Justify which circuit is most suitable for use in the torch.

[1]

Total Marks for Question Set 19: 7

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