2019 Ph H1 Q23

Section: Electricity

Topic: Current, PD, Power, Resistance

Question Summary

A 6.0 V battery is connected across two resistors in parallel: 3.0 Ω and 6.0 Ω. What power is dissipated in the 3.0 Ω resistor?

Worked Solution

In parallel, each branch has the full 6.0 V.
$P = V^2/R = (6.0)^2/3.0 = 12$ W.

Cross-check: $I = V/R = 2$ A, $P = VI = 6 \times 2 = 12$ W.

Final Answer: D

Revision Tips

- Parallel: same voltage across each branch.
- Use $P = V^2/R$ for a quick calculation.
- Cross-check with $P = VI$ or $P = I^2R$.