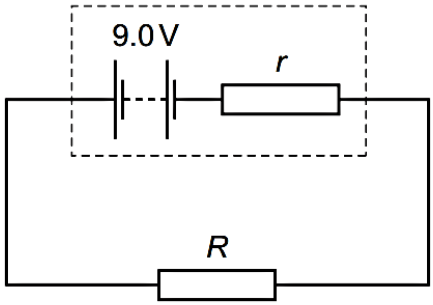
22 A simple circuit is formed by connecting a resistor of resistance *R* between the terminals of a battery of electromagnetic force (e.m.f.) 9.0 V and constant internal resistance *r*.



A charge of 6.0 C flows through the resistor in a time of 2.0 minutes causing it to dissipate 48 J of thermal energy.

What is the internal resistance *r* of the battery?

A 0.17 Ω **B** 0.33 Ω **C** 20 Ω **D** 160 Ω