

- 34** A coil contains  $N$  turns of insulated copper wire wound on to a cylindrical iron core of diameter  $D$ . The copper wire has a diameter  $d$ . The resistivity of copper is  $\rho$ . Diameter  $D$  is much greater than diameter  $d$ .

What is the total resistance between the two ends of the coil?

**A**  $\frac{4N\rho D}{d^2}$

**B**  $\frac{4N\rho d}{D^2}$

**C**  $\frac{8N\rho D}{d^2}$

**D**  $\frac{8N\rho d}{D^2}$

- 35** Two cells are connected to a load resistor of resistance  $2.0\,\Omega$ . The electromotive force (e.m.f.)