

- 34** A relay is required to operate 800 m from its power supply. The power supply has negligible internal resistance. The relay requires 16.0V and a current of 0.60A to operate.

A cable connects the relay to the power supply and two of the wires in the cable are used to supply power to the relay.

The resistance of each of these wires is  $0.0050\Omega$  per metre.

What is the minimum output e.m.f. of the power supply?

**A** 16.6 V

**B** 18.4 V

**C** 20.8 V

**D** 29.3 V

**Space for working**