36 The electromotive force (e.m.f.) of a cell is 6.0 V. It has negligible internal resistance and is connected across a resistor. The potential difference (p.d.) across the resistor is also 6.0 V.

The e.m.f. and the p.d. have the same numerical value but represent different processes.

Which statement about the different processes is correct?

A The e.m.f. is the energy transferred from chemical energy to electrical energy in the cell and the p.d. is the energy transferred from electrical energy to thermal energy in the resistor.

B The p.d. is the energy transferred from chemical energy to electrical energy in the cell and the e.m.f. is the energy transferred from electrical energy to thermal energy in the resistor.

C The e.m.f. is the energy transferred per unit charge from chemical energy to electrical energy in the cell and the p.d. is the energy transferred per unit charge from electrical energy to thermal energy in the resistor.

D The p.d. is the energy transferred per unit charge from chemical energy to electrical energy in the cell and the e.m.f. is the energy transferred per unit charge from electrical energy to thermal energy in the resistor.