7 A capacitor consists of two parallel metal plates, separated by an insulator, as shown in Fig. 7.1.

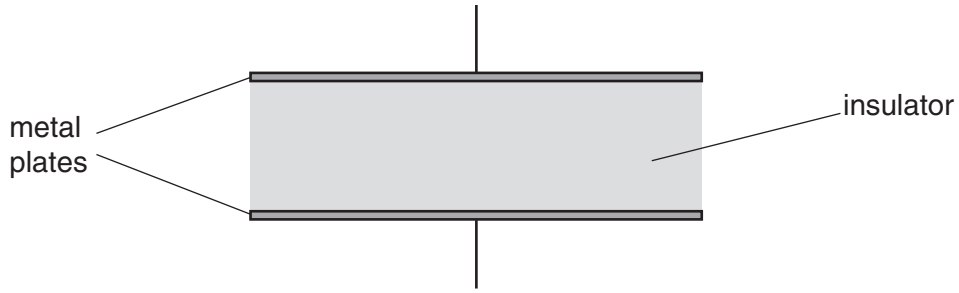

Fig. 7.1

(a) Suggest why, when the capacitor is connected across the terminals of a battery, the capacitor stores energy, not charge.

.....

.....

.....[2]

(b) Define the *capacitance* of the capacitor.

.....

.....

.....[2]

(c) The capacitor is charged so that the potential difference between its plates is V_0.
The capacitor is then connected across a resistor for a short time. It is then disconnected.
The energy stored in the capacitor is reduced to $\frac{1}{16}$ of its initial value.

Determine, in terms of V_0, the potential difference across the capacitor.

potential difference = ...[2]

[Total: 6]