7 A student sets up the circuit shown in Fig. 7.1 to measure the charge on a capacitor C for different values of potential difference across the capacitor.

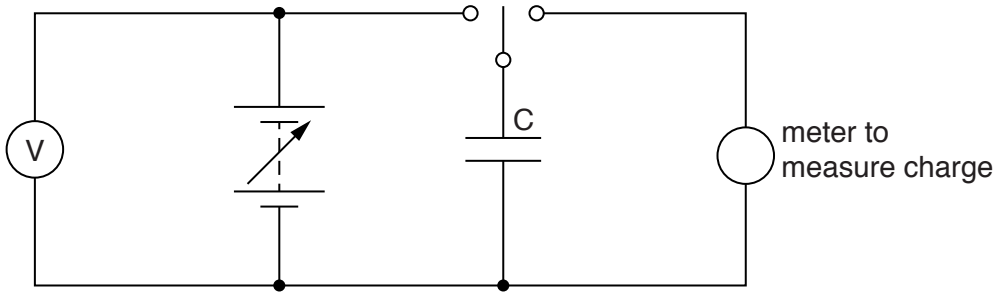

Fig. 7.1

The variation with potential difference V of the charge Q stored on the capacitor is shown in Fig. 7.2.

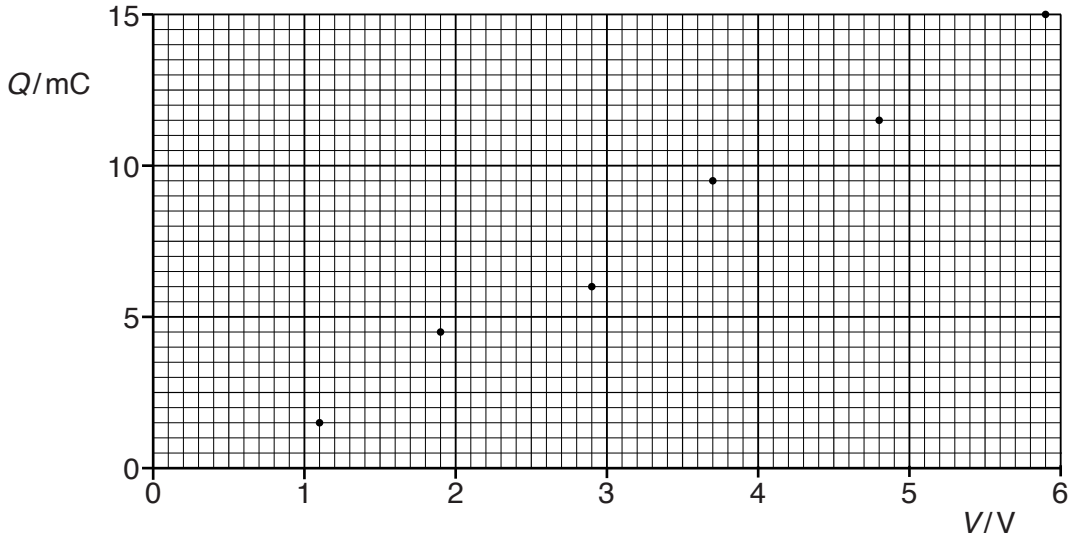

Fig. 7.2

(a) State and explain how Fig. 7.2 indicates that there is a systematic error in the readings of one of the meters.

.....

.....

..... [2]

(b) Use Fig. 7.2 to determine the capacitance, in μF, of capacitor C.

capacitance = ... μF [3]

(c) Use your answer in **(b)** to determine the additional energy stored in the capacitor C when the potential difference across it is increased from 6.0 V to 9.0 V.

energy = ...J [3]

[Total: 8]