






Questions for Learning (QfL) provide teachers with rich teaching resources. Subject specialists have selected and annotated questions that address the thorny issues for students.

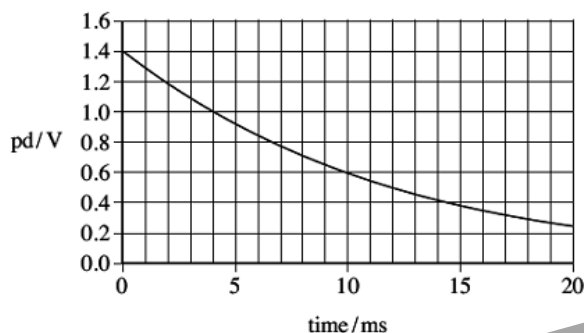
Elements of each question are highlighted and linked to rich commentary and explanations. Fantastic to present as a topic introduction or as a plenary.

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QfL Capacitor in heart pacemaker

The figure below shows part of the discharge curve for a capacitor that a manufacturer uses in a heart pacemaker.



The capacitor was initially charged to a potential difference (pd) of 1.4 V and then discharged through a 150 Ω resistor.

(a) Show that the capacitance of the capacitor used is about 80 μF.

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(3)

- show/hide all
- Maths requirement
- Mark scheme
- Model answer
- Further explanation
- Possible Incorrect responses
- Scientific terms

Annotation Framework showing categories; tick to display one, more or all.

Click on highlight to display relevant comment

The work done (or energy transfer per unit charge). Measured in J C⁻¹.

$$1 \text{ J C}^{-1} = 1 \text{ V}$$

Make sure that the explanation is logical. Rate of change of pd is proportional to the rate of change of charge since $V = Q/C$ and rate of change of charge on the capacitor is equal to the current through the resistor in the discharge circuit.

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