

Experiment 8: The total energy that can be liberated from a new 1.5V dry cell.

You are asked to design an experiment to measure the total amount of electrical energy that can be liberated from a new 1.5 V dry cell. You may assume that you have available the equipment listed below.

- 1.5 V dry cell mounted in a cell holder
- 1.5 V (nominal) filament lamp
- Rheostat
- Small electric motor, mounted on a wooden board
- G-clamp
- A system of mounted pulleys and belts
- Set of ten 50 g masses
- Ammeter
- Voltmeter
- Switch
- Connecting wires
- Stopwatch
- Metre rule

You may select any or all of the apparatus listed above, and also other apparatus that is readily available in a physics laboratory, but *not* a joulemeter.

- (a) Draw a diagram showing how you would arrange the equipment so that you may carry out the investigation.
- (b) Describe how you would perform the experiment, stating clearly which measurements would be taken from the equipment selected.
- (c) Explain how you would use your results to calculate a value for the available electrical energy.