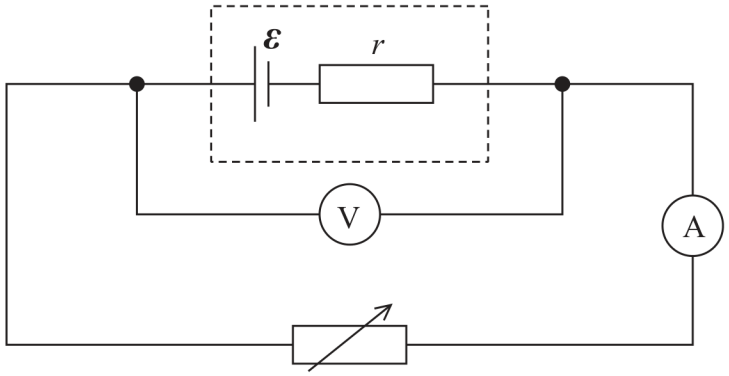
Questions 5 and 6 refer to the following information.

The diagram shows a circuit used to determine the internal resistance r and e.m.f. ε of a cell.



5 Corresponding values of potential difference V and current I were taken after adjusting the variable resistor. A graph of V on the y-axis against I on the x-axis was plotted.

Which of the following is correct?

☒ **A** The area underneath the graph is the total energy dissipated in the cell.

☒ **B** The gradient of the graph is r.

☒ **C** The graph shows that V and I are directly proportional.

☒ **D** The y-intercept of the graph is ε.

(Total for Question 5 = 1 mark)

DO NOT WRITE IN THIS AREA