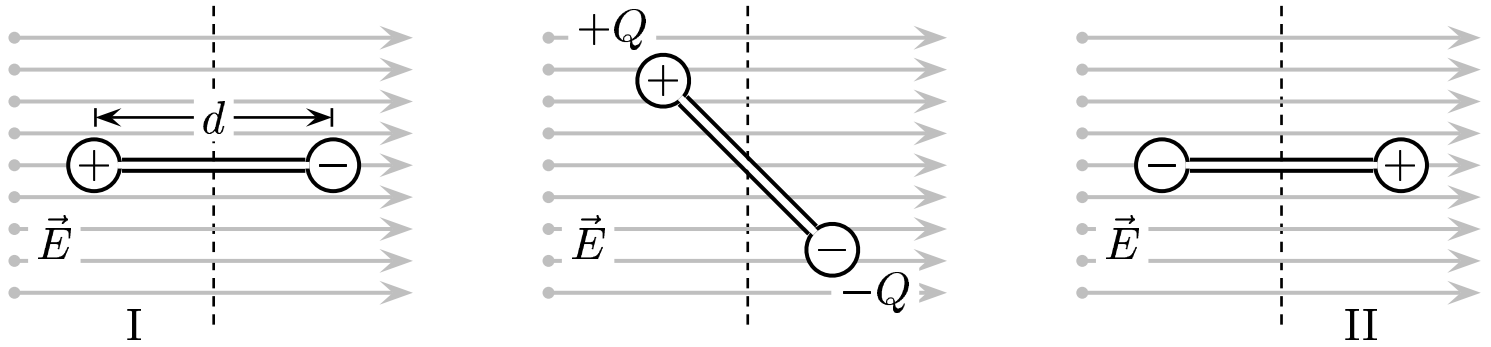


A dipole of  $\pm Q$ , with a separation  $d$  is placed in a uniform constant electric field  $\vec{E}$ .



Determine the potential energy released in flipping the dipole from I to II, while pivoting about its center.

- A)  $|\Delta U| = Q E d.$
- B)  $|\Delta U| = 2 Q E d.$
- C)  $|\Delta U| = 3 Q E d.$
- D)  $|\Delta U| = 4 Q E d.$

For  $+Q$ , the potential energy released  $\Delta U = Q (V_I - V_{II}) = Q E d$ .

Thus the total potential energy released is  $\Delta U = 2 Q E d$ .

Answer B.

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