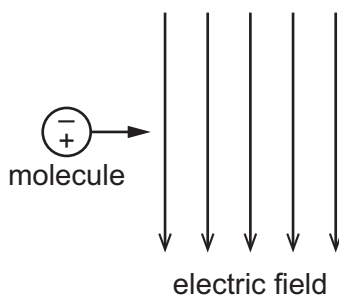


- 30 A molecule behaves as an electric dipole consisting of two equal point charges, of opposite sign, separated by a fixed distance. The molecule moves with constant horizontal velocity as it enters a vertical uniform electric field, as shown.

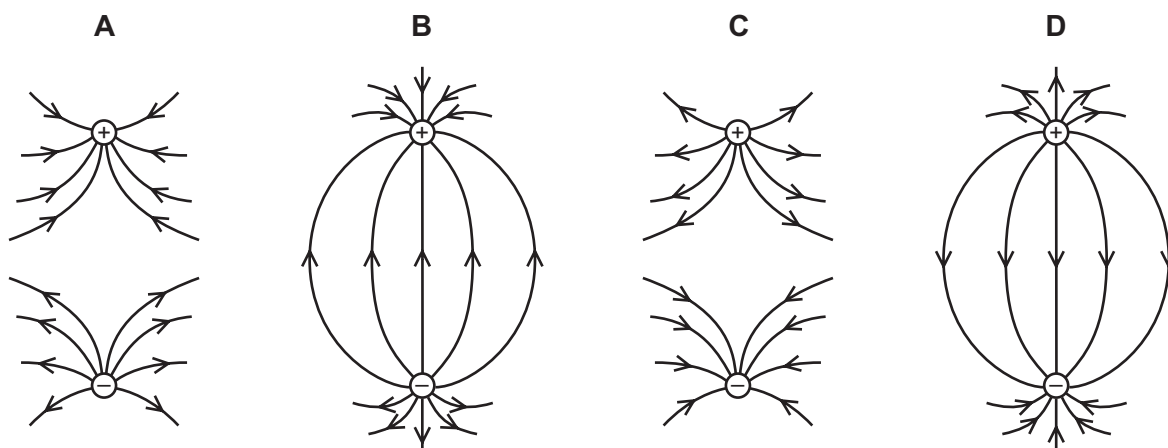


The positive and negative charges of the molecule enter the field at the same time.

Which row describes the velocity of the molecule in the field?

	horizontal component of velocity	vertical component of velocity
<b>A</b>	constant	increases
<b>B</b>	constant	zero
<b>C</b>	increases	increases
<b>D</b>	increases	zero

- 31 Which diagram best represents the electric field between two point charges of equal magnitude and opposite sign?



- 32 A pedal bicycle is fitted with an electric motor. The rider switches on the motor for a time of 3.0 minutes. A constant current of 3.5 A in the electric motor is provided from a battery with a terminal voltage of 24 V.

What is the energy supplied by the battery?

- A** 84 J                      **B** 250 J                      **C** 630 J                      **D** 15 000 J