

Answer on Question #54305 – Chemistry – General chemistry

Question:

Charges of $+2C$ and $-2C$ are situated at points P and Q respectively which are at a distance apart. A point X is mid-way between P and Q. Which of the following correctly describes the electric field and the electric potential at point X?

electric field is toward Q, electric potential is zero

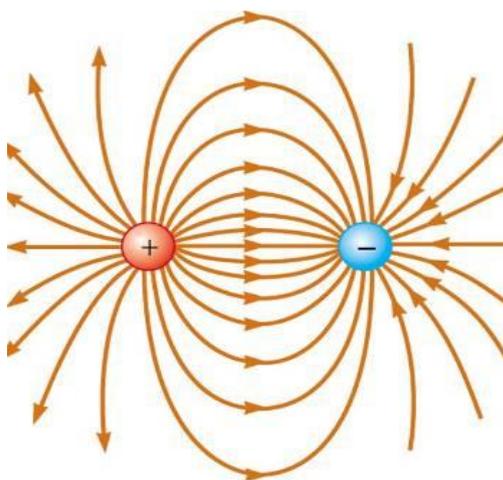
electric field is toward Q, electric potential is negative

electric field is toward P, electric potential zero

electric field is toward P, electric potential is positive

Solution:

One charge is negative and the other charge is positive, so the two charges are attractive. At the mid-point, the electric fields of the two charges are additive and points towards the negative charge.



The electric potential halfway between two equal but opposite charges is 0.

Answer: electric field is toward Q, electric potential is zero