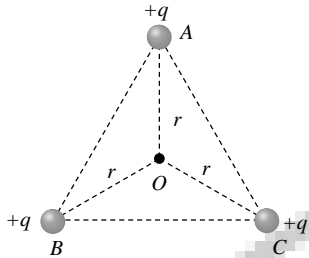# LAKSHYA (JEE)

Electric Charges and Field

DPP-05

1. ABC is an equilateral triangle. Charges $+q$ are placed at each corner. The electric intensity at O will be

(a) $\dfrac{1}{4\pi\varepsilon_0}\dfrac{q}{r^2}$

(b) $\dfrac{1}{4\pi\varepsilon_0}\dfrac{q}{r}$

(c) Zero

(d) $\dfrac{1}{4\pi\varepsilon_0}\dfrac{3q}{r^2}$

2. An electron and a proton are in a uniform electric field, the ratio of their accelerations will be
(a) Zero
(b) Unity
(c) The ratio of the masses of proton and electron
(d) The ratio of the masses of electron and proton

3. The distance between the two charges $25\mu C$ and $36\mu C$ is 11 cm. At what point on the line joining the two, the intensity will be zero
(a) At a distance of 5 cm from $25\mu C$
(b) At a distance of 5 cm from $36\mu C$
(c) At a distance of 10 cm from $25\mu C$
(d) At a distance of 11 cm from $36\mu C$

4. Two charges $+4e$ and $+e$ are at a distance x apart. At what distance, a charge q must be placed from charge $+e$ so that it is in equilibrium
(a) $x/2$
(b) $2x/3$
(c) $x/3$
(d) $x/6$

5. The intensity of electric field required to balance a proton of mass $1.7\times10^{-27}\,kg$ and charge $1.6\times10^{-19}\,C$ is nearly
(a) $1\times10^{-7}\ V/m$
(b) $1\times10^{-5}\ V/m$
(c) $1\times10^{7}\ V/m$
(d) $1\times10^{5}\ V/m$

6. On rotating a point charge having a charge q around a charge Q in a circle of radius r. The work done will be
(a) $q\times2\pi r$
(b) $\dfrac{q\times2\pi Q}{r}$
(c) Zero
(d) $\dfrac{Q}{2\varepsilon_0 r}$

7. Deutron and α – particle are put 1 Å apart in air. Magnitude of intensity of electric field due to deutron at α – particle is
(a) Zero
(b) $2.88\times10^{11}\ newton/coulomb$
(c) $1.44\times10^{11}\ newton/coulomb$
(d) $5.76\times10^{11}\ newton/coulomb$

8. Two positive charges of 20 coulomb and Q coulomb are situated at a distance of 60 cm. The neutral point between them is at a distance of 20 cm from the 20 coulomb charge. Charge Q is

(a) 30 C

(b) 40 C

(c) 60 C

(d) 80 C

9. Four charges are placed on corners of a square as shown in figure having side of 5 cm. If Q is one microcoulomb, then electric field intensity at centre will be
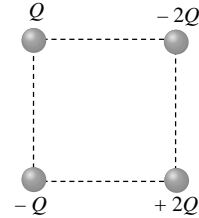
(a) $1.02 \times 10^7 \, N/C$ upwards

(b) $2.04 \times 10^7 \, N/C$ downwards

(c) $2.04 \times 10^7 \, N/C$ upwards

(d) $1.02 \times 10^7 \, N/C$ downwards

ANSWERS

1. **(C)**

2. **(C)**

3. **(A)**

4. **(C)**

5. **(A)**

6. **(C)**

7. **(C)**

8. **(D)**

9. **(A)**

Note – If you have any query/issue

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