

Most Repeated Questions in JEE Main Physics from Gauss's Law

Q: A point charge causes an electric flux of $-2 \times 10^4 \text{ Nm}^2 \text{ C}^{-1}$ to pass through a spherical Gaussian surface of 8.0 cm radius, centred on the charge. The value of the point charge is :
(Given $\epsilon_0 = 8.85 \times 10^{-12} \text{ C}^2 \text{ N}^{-1} \text{ m}^{-2}$)

Q: A line charge of length $a/2$ is kept at the center of an edge BC of a cube ABCDEFGH having edge length 'a' as shown in the figure. If the density of line charge is $\lambda \text{ C}$ per unit length, then the total electric flux through all the faces of the cube will be __. (Take, ϵ_0 as the free space permittivity)

Q: Five charges $+q$, $+5q$, $-2q$, $+3q$ and $-4q$ are situated as shown in the figure. The electric flux due to this configuration through the surface S is:

Q: σ is the uniform surface charge density of a thin spherical shell of radius R. The electric field at any point on the surface of the spherical shell is:

Q: Q. A charge q is placed at the center of one of the surface of a cube. The flux linked with the cube is:

Q: C1 and C2 are two hollow concentric cubes enclosing charges $2Q$ and $3Q$ respectively as shown in figure. The ratio of electric flux passing through C1 and C2 is:

Q: Two charges of $5Q$ and $-2Q$ are situated at the points $(3a, 0)$ and $(-5a, 0)$ respectively. The electric flux through a sphere of radius ' $4a$ ' having center at origin is:

Q: Assertion A: If an electric dipole of dipole moment $30 \times 10^{-5} \text{ C}$ is enclosed by a closed surface, the net flux coming out of the surface will be zero.

Reason R: Electric dipole consists of two equal and opposite charges.

(A) A is true but R is false

(B) A is false but R is true

(C) Both A and R are true but R is NOT the correct explanation of A

(D) Both A and R are true and R is the correct explanation of A

Q: Q. In a cuboid of dimension $2L \times 2L \times L$, a charge q is placed at the center of the surface 'S' having area of $4L^2$. The flux through the opposite surface to 'S' is given by

Q: Expression for an electric field is given by The electric flux through the cube of side 20 cm when placed in electric field (as shown in the figure) is ____ V cm.