Electric Charges and Fields
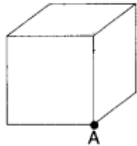
1. The surface considered for Gauss's law is called
(a) Closed surface
(b) Spherical surface
(c) Gaussian surface
(d) Plane surface

▼ **Answer**

Answer: c

---

2. The total flux through the faces of the cube with side of length a if a charge q is placed at corner A of the cube is

(a) $\dfrac{q}{8\varepsilon_0}$ (b) $\dfrac{q}{4\varepsilon_0}$

(c) $\dfrac{q}{2\varepsilon_0}$ (d) $\dfrac{q}{\varepsilon_0}$

▼ **Answer**

Answer: a

---

3. Which of the following statements is not true about Gauss's law?
(a) Gauss's law is true for any closed surface.
(b) The term q on the right side side of Gauss's law includes the sum of all charges enclosed by the surface.
(c) Gauss's law is not much useful in calculating electrostatic field when the system has some symmetry.
(d) Gauss's law is based on the inverse square dependence on distance contained in the coulomb's law

▼ **Answer**

Answer: c

---

4. A charge Q is placed at the centre of the line joining two point charges +q and +q as shown in the figure. The ratio of charges Q and q is
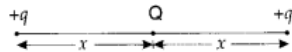
(a) 4
(b) 1/4
(c) -4
(d) -1/4

▼ **Answer**

Answer: d

---

5. The force per unit charge is known as
(a) electric flux
(b) electric field
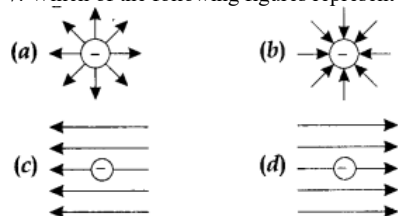(c) electric potential
(d) electric current

▼ **Answer**

Answer: b

6. Electric field lines provide information about
(a) field strength
(b) direction
(c) nature of charge
(d) all of these

▼ **Answer**

Answer: d

7. Which of the following figures represent the electric field lines due to a single negative charge?

▼ **Answer**

Answer: b

8. The SI unit of electric flux is
(a) $N\ C^{-1}\ m^{-2}$
(b) $N\ C\ m^{-2}$
(c) $N\ C^{-2}\ m^{2}$
(d) $N\ C^{-1}\ m^{2}$

▼ **Answer**

Answer: d

9. The unit of electric dipole moment is
(a) newton
(b) coulomb
(c) farad
(d) debye

▼ **Answer**

Answer: d

10. Consider a region inside which, there are various types of charges but the total charge is zero. At points outside the region
(a) the electric field is necessarily zero.
(b) the electric field is due to the dipole moment of the charge distribution only.
(c) the dominant electric field is inversely pro-portional to r3, for large r (distance from ori-gin).
(d) the work done to move a charged particle along a closed path, away from the region will not be zero.

▼ **Answer**

Answer: c

Answer: d

11. SI unit of permittivity of free space is
(a) Farad
(b) Weber
(c) $C^2 N^{-1} m^{-2}$
(d) $C^2 N^{-1} m^{-2}$

▼ **Answer**

Answer: c