23 Lecture - PHY101

Important Mcqs

What is the electric field intensity at a distance of 2 meters from a point charge of 5 µC?

a) 9 x 10^9 N/C

b) 1.125 x 10^10 N/C

c) 2.25 x 10^10 N/C

d) 4.5 x 10^10 N/C

Answer: b) 1.125 x 10^10 N/C

Which law of electrostatics relates the electric field to the charge density?

a) Coulomb’s Law

b) Gauss’s Law

c) Ohm’s Law

d) Ampere’s Law

Answer: b) Gauss’s Law

What is the electric potential at a point P, located at a distance of 2 meters from a point charge of 10 µC?

a) 1.125 x 10^10 V

b) 9 x 10^9 V

c) 4.5 x 10^10 V

d) 2.25 x 10^10 V

Answer: d) 2.25 x 10^10 V

What is the potential difference between two points A and B, located at a distance of 5 cm and 10 cm respectively from a point charge of 2 μC?

a) 1.8 x 10^9 V

b) 2.2 x 10^9 V

c) 3.6 x 10^9 V

d) 4.4 x 10^9 V

Answer: c) 3.6 x 10^9 V

What is the work done in moving a charge of 5 μC from a point A to a point B, located at a distance of 10 cm and 20 cm respectively from a point charge of 10 μC?

a) -4.5 x 10^-6 J

b) 4.5 x 10^-6 J

c) 9 x 10^-6 J

d) -9 x 10^-6 J

Answer: a) -4.5 x 10^-6 J

What is the electric field intensity at the center of a circular ring of radius R and charge Q?

a) kQ/R^2

b) 2kQ/R^2

c) 3kQ/R^2

d) 4kQ/R^2

Answer: a) kQ/R^2

What is the electric field intensity at a point on the axis of a uniformly charged disc of radius R and charge Q, at a distance of x from the center of the disc?

a) kQx/2(R^2 + x^2)^(3/2)

b) kQx/(R^2 + x^2)^(3/2)

c) kQ/2(R^2 + x^2)^(3/2)

d) kQ/(R^2 + x^2)^(3/2)

Answer: b) kQx/(R^2 + x^2)^(3/2)

What is the electric potential at the center of a uniformly charged sphere of radius R and charge Q?

a) kQ/R

b) kQ/2R

c) kQ/3R

d) kQ/4R

Answer: d) kQ/4R

What is the work done in moving a charge of 10 μC from a point A to a point B, located at a distance of 5 cm and 10 cm respectively from a uniformly charged sphere