K. R. D. International School

Class :- 12th **Subject - PHYSICS**

Worksheet-1

ELECTRIC CHARGE AND FIELDS

A. Multiple choice questions:-

Q1. Electric field line provide information about

a) Field strength b) direction c) nature of charge d) all of these

Q2. The surface considered for Gauss's law is called

a) closed surface b) spherical surface c) Gaussian surface d) plane surface

Q3. The force per unit charge is known as

a) electric flux b) electric field c) electric potential d)electric current

Q4. The unit of electric diplole moment is

a) newton b) coulomb c) farad d) debye

Q5. When the separation between two charges is increased the electric potential energy of the charges is

a) increases b) decreases remains the same c) Remains same d) may increase or decrease

B. Very short answer type questions:-

Q6. Why do the electrostatic field lines not form closed loop?

Q7. Define dipole moment of an electric dipole . Is it a scalar quantity or a vector quantity?

Q8. What is the electric flux through a cube of side 1cm which encloses an electric dipole?

C. Short answer questions

Q9. State Gauss's law in electrostatics. Using this law derive an expression for the electric field due to a uniformly changed infinite plane sheet.

Q10. Derive an expression for electric field at a point on the equatorial line of an electric dipole.

Q11. A particle of mass m and charge q is released from rest in a uniform electric field of intensity E. Calculate the kinetic energy attained by this particle after a moving a distance between plates.

Q12. The electrostatics force on a small sphere of charge 0.4 micro coulomb due to another small sphere of charge - 0.8 micro coulomb in air is 0.2 N , what is distance between the two spheres?