

J&K POLICE PUBLIC SCHOOL, MIRAN SAHIB
ASSIGNMENT-1
SUBJECT- PHYSICS

TIME : 40 minutes
Tr. I/C : SURBHI

M.Marks: 20
CLASS 12TH

General Guidelines

Attempt all questions

Very short Answer Type Questions – 1 Marks Each

Short Answer Type Questions- 3Marks Each

Long Answer Type Questions – 5 Marks Each

SECTION A

VERY SHORT ANSWER TYPE QUESTIONS

Q1. Is the force acting between two point charges q_1 and q_2 kept at some distance apart in air attractive or repulsive when (i) $q_1 q_2 > 0$ (ii) $q_1 q_2 < 0$

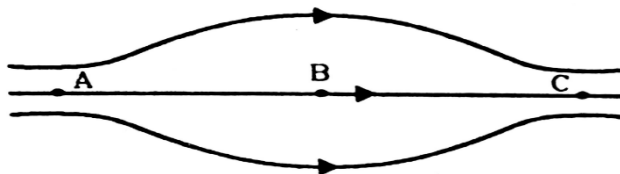
Q2. Two equal balls having equal positive charge 'q' coulombs are suspended by two insulating strings of equal length. What would be the effect on the force when a plastic sheet is inserted between the two?

Q3. The distance of the field point, on the equatorial plane of a small electric dipole is halved. By what factor does the electric field due to the dipole change?

SECTION B

SHORT ANSWER TYPE QUESTIONS

Q4. Fig. shows some of the electric field lines corresponding to an electric field. The electric field at which point is minimum.



Q5. An electric dipole is placed in a uniform electric field ' \vec{E} ' with its dipole moment ' \vec{p} ' parallel to the field. Find (i) the work done in turning the dipole till its dipole moment points in the direction opposite to ' \vec{E} ' (ii) the orientation of the dipole for which the torque acting on it becomes maximum.

Q6. Three charges, each equal to q , are placed at the three corners of a square of side 'a'. Find the electric field at the fourth corner.

Q7. A long charged cylinder of linear charge density λ is surrounded by a hollow co-axial conducting cylinder. Calculate the electric field in the space between the two cylinders?

SECTION C

LONG ANSWER TYPE QUESTIONS

Q8. (i) Using Gauss's theorem, derive an expression for electric field intensity at a point due to a thin infinite plane sheet of charge.

(ii) Two charges q and $-3q$ are placed fixed on x-axis separated by distance 'd'. Where should a third charge ($2q$) be placed such that it will not experience any force?

