DELHI PUBLIC SCHOOL , JAMMU
SESSION 2019-20
ASSIGNMENT FOR CYCLE TEST I

SUBJECT: PHYSICS   **CLASS: XII**

Q1. Charge of 2μC is placed at the centre of a cube of volume 8 cm^3. What is the electric flux passing through one face?

Q2 Three charges, each equal to +2μC are placed at the corners of an equilateral triangle. If the force between any two charges be F, then what will be the net force on either Charge?

Q3. An electric dipole of dipole moment 20 X 10^{-6}C.m is enclosed by a closed surface. What is the net flux coming out of the surface?

Q4Two capacitors of capacitance 6mF and 12mF are connected in series with the battery. The voltage across the 6mF capacitor is 2 volt .Compute the total battery voltage.

Q5 A parallel plate capacitor with air between the plates has a capacitance of 8 pF . The separation between the plates is now reduced by half and the space between them is filled with a medium of dielectric constant 5. Calculate the value of capacitance of parallel plate capacitor in second case.

Q6An uncharged capacitor is connected to a battery. Show that half of the energy supplied by the battery is lost as heat while charging the capacitor.

Q7. What is the angle between the electric dipole moment and electric field strength due to an electric dipole on the equatorial line?

Q8 How many electrons will have a total charge of 1 coulomb?

Q9 State SI unit of electric field intensity and electric flux.

Q10 What is the intensity of electric field inside a charged spherical shell?

Q11 What is an equipotential surface? Sketch equipotential surface for uniform electric field and isolated point charge?

Q12 What is Gauss's law? Derive an expression for electric field intensity due to an infinitely long straight uniformly charged wire.

Q15 A 10Ω thick wire is stretched so that its length becomes three times. Assuming that there is no change in its density on stretching. Calculate the resistance of new wire.

Q16 How does resistivity of a metal and semiconductor varies with increase in temperature? Give reasons.

Q17 Write a relation between emf and terminal potential difference

(a) When the cell delivers the current in the circuit.
(b) When no current is withdrawn from the cell

Q18 What is an equi potential surface? Sketch equi potential surface for uniform electric field and isolated point charge?