Short Answer type questions

1) What is the dimension formula for $\frac{1}{4\pi\varepsilon_0}$?

a) $ML^3T^{-4}A^{-2}$
b) $ML^3T^{-2}A^{-2}$
c) $ML^2T^{-4}A^{-2}$
d) $ML^3T^{-1}A^{-2}$

Ans (a)

2. X,Y,Z are three charged bodies . X and Y repel each other And X attracts Z.
What is the nature of force between B and C?

a) Attractive
b) Repulsive

Ans (a)

3. On going away from point charge ,the electric field due to charge decreases . This is also true for small electric dipole.Does the electric field decreases at the same rate?
a) Yes
b) No

Ans (b)

The field due to electric charge decrease more rapidly as
Electric Field for electric dipole

$$E\alpha\frac{1}{r^3}$$

Electric Field due to charge

$$E\alpha\frac{1}{r^2}$$

4. Match the column

Materials	**Carrier of electric current**
Metallic rod	Electrons and protons
Semiconductor	Positive and negative ions
Super conductor	Electrons and holes
A hydrogen discharge tube	Electron pairs
An electrolytic cell	Free electrons