12.16 QUESTIONS FROM PAST PAPERS:

Definitions:

Q.5(c)Write Down the definition and the units of:

(i) Intensity of an electric field (ii) Electric flux

(iii) Electric potential difference (vi) Electric current **(Chapter# 13)**

(2005)

Coulomb's law and Electric field intensity:

Q.1 State Coulomb's Law and give its mathematical relation for the force between the charges when placed:

(i) In a free space (ii) In a medium of relative permittivity ($\in_r$)

(2007)

Electric Flux and Gausses Law:

Q.1 State Gauss's Law. Apply the law to find electric intensity due to a uniformly charged metallic sphere at a point "P" lying outside the charged sphere.

(2012, 2001)

Q.2 State Gauss's Law. Apply it to determine the electric intensity at a point due to a thin, infinite sheet of positive charge.

(2010, 2008, 2006, 2004, 2002 P.E 2002 P.M)

Q.3 Explain Electric Flux. Under what conditions will the flux through the surface be? (i) zero (ii) maximum. **(2007)**

Q.4 State and Prove Gauss's Law. **(2003 P.E)**

Electric Potential:

Q.1 Define Electric Potential. Derive the relation between an Electric Field and Potential Difference. **(2004, 2003 P.M)**

Q.2 Define Electric Intensity and Potential Difference and obtain the relation between them. **(2002 P.E)**

Capacitor:

Q.1 What is capacitor? Derive the expression for the capacitance of parallel plate capacitor when. **(2011, 2008, 2006, 2005, 2001)**

(i) Air exists between the Plates

(ii) Space between plates is partially filled by a dielectric medium

Q.2 Derive a relation for equivalent capacitance when three capacitor are connected in series. **(2009, 2003 P.M)**

Q.3 Derive a relation to find the equivalent capacitance of three capacitors connected in parallel. **(2002 P.M)**

Q.4 What is a compound capacitor? Derive an expression for its capacitance, if the space between the plates is partially filled with a slab of dielectric. **(2013 P.M)**