Chapter 12: Electrostatics

1. The value of relative permittivity for all the dielectrics other than air or vacuum is always

   a) Less than unity   b) Greater than unity   c) Equal to unity   d) Zero

2. The force between two point charges separated by air is 4 N. when separated by medium of relative permittivity 2, the force between them becomes

   a) 1/2 N   b) 2N   c) 4N   d)8N

3. The SI unit of Coulomb Constant is

   a) Nm^2C^2 b) $Nm^{-2}C^2$ c) Nm^2C^{-2} d) $Nm^{-2}C^{-2}$

4. The SI unit of electric flux is

   a) NmC^{-1} b) NmC^{-2} c) Nm^2C^{-1} d) Nm^2C^{-2}

5. The expression of energy stored in a capacitor is given by

   a) $E=CV^2$ b) $E=1/2CV^2$ c) $E=1/2C^2V$ d) $E=1/2(CV)^2$

6. Potential gradient is defined as:

   a) $\Delta E/\Delta V$ b) $-\Delta V/\Delta E$ c) $-\Delta V/\Delta r$ d) $\Delta r/\Delta V$

7. A dielectric material is placed between plates of a parallel plate capacitor. Its capacitance increases due to

   a) Polarization   b) Rectification   c) Magnification   d) Increased electric field

8. The time constant of RC circuit, how much charge is stored, out of maximum charge q_o

   a) $0.37 q_o$ b) $0.51 q_o$ c) $0.63 q_o$ d) $0.90 q_o$

9. The word Xerography means

   a) Writing by left hand b)   Writing by water color c) Writing by children d) Dry writing

10. The force experienced by unit positive charge placed at a point in an electric field is called

    a) Coulomb force   b) Faraday's force   c) Lorentz's force   d) Electric field intensity

11. The increase in the capacitance of a capacitor due to the presence of dielectric is due to ----- of dielectric

    a) Electric polarization   b) Electrification   c) Ionization   d) Electrolysis

12. A particle having 2e charge falls through a potential difference of 5V. Energy acquired by it   is_____

    a) 2.5 eV   b) 20 eV   c) 0.4 eV   d) 10 eV

13. The electric field created by positive charge is

    a) Radially outward   b) Radially inward   c) Circular   d) Zero

14. For the computation of the electric flux the surface area should be

    a) Flat   b) Curved   c) Inclined   d) Spherical

15. SI unit of electric flux is

    a) NmC^{-2} b) $Nm^{-1}C^2$ c) Nm^2C^{-1} d) $Nm^{-2}C$

16. If the medium between the charges is not free space then electrostatic force will

    a) Increase   b) Decrease   c) Remain same   d) None of these

17. A particle carrying a charge of 2e falls through P.D of 3V. Energy acquired by it is

    a) 9.6×10^{-15} J   b) 9.6×10^{-16} J   c) 9.6×10^{-19} J   d) 9.6×10^{-20} J

    18.   Equation $\Phi = E . A$ is applicable to surface a) Spherical b) Cylindrical c) Conical d) Flat