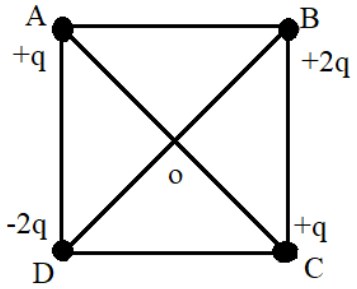
UPmyRANKS

Electric Charges and Fields (Part-1)

1. When 10^{19}electrons are removed from a neutral metal plate, the electric charge on it is
   a) – 1.6 C b) + 1.6 C c) 10^{+19} C d) 10^{-19} C
2. There are two charges +1 microcoulombs and +5 microcoulombs. The ratio of the forces acting on them will be
   a) 1 : 5 b) 1 : 1 c) 5 : 1 d) 1 : 25
3. Four charges are arranged at the corners of a square , as shown in the adjoining figure. The force on ABCD , as shown in the adjoining figure. The force on the charge kept at the centre O is



   a) Zero b) Along the diagonal AC
   c) Along the diagonal BD d) Perpendicular to side AB
4. Two small spheres each having the charge +Q are suspended by insulating threads of length L from a hook. This arrangement is taken in space where there is no gravitational effect, then the angle between the two suspensions and the tension in each will be
   a) 180^o , $\frac{1}{4\pi\varepsilon 0}\ \frac{Q2}{(2L)2}$ b) 90^o , $\frac{1}{4\pi\varepsilon 0}\ \frac{Q2}{L2}$
   c) 180^o , $\frac{1}{4\pi\varepsilon 0}\ \frac{Q2}{2L2}$ d) 180^o , $\frac{1}{4\pi\varepsilon 0}\ \frac{Q2}{L2}$
5. Electric charges of $1\mu C$, $-1\mu C$ and $2\ \mu C$ are placed in air at the corners *A*, *B* and *C* respectively of an equilateral triangle *ABC* having length of each side 10 *cm*. The resultant force on the charge at *C* is
   a) 0.9 N b) 1.8 N c) 2.7 N d) 3.6 N
6. The ratio of the forces between two small spheres with constant charge (a) in air (b) in a medium of dielectric constant *K* is
   a) 1 : K b) K : 1 c) 1 : K^2 d) K^2 : 1