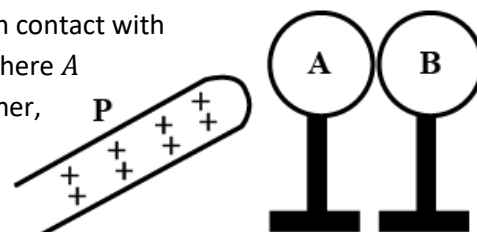


Electric Charges and Fields

Topics:

- Basic Properties of Electric Charges

1. Consider three charged bodies P , Q and R . If P and Q repel each other and P attracts R , what is the nature of the force between Q and R ?
2. Five balls, numbered 1 to 5 are suspended using separate threads. Pairs (1, 2), (2, 4), (4, 1) show electrostatic attraction, while pairs (2, 3) and (4, 5) show repulsion. What is the nature of charge on ball 1?
3. Two metallic spheres A and B kept on insulating stands are in contact with each other. A positively charged rod P is brought near the sphere A as shown in fig. The two spheres are separated from each other, and the rod P is removed. What will be the nature of charges on spheres A and B ? [CBSE OD 19]



4. Two insulated charged copper spheres A and B of identical size have the charges q_A and q_B respectively. A third sphere C of the same size but uncharged is brought in contact with the first and then with the second and finally removed from both. What are the new charges on A and B ? [CBSE F 11]
5. Two identical conducting balls A and B have charges $-Q$ and $+3Q$ respectively. They are brought in contact with each other and then separated by a distance d apart. Find the nature of the Coulomb force between them. [CBSE OD 19]
6. Two identical metallic spheres A and B having charges $+4Q$ and $-10Q$ are kept a certain distance apart. A third identical uncharged sphere C is first placed in contact with sphere A and then with sphere B . Then, spheres A and B are brought in contact and then separated. Find the charges on the spheres A and B . [All India 2011C]
7. A polythene piece rubbed with wool is found to have a negative charge of $3.2 \times 10^{-7} \text{ C}$.
 - (i) Estimate the number of electrons transferred.
 - (ii) Is there a transfer of mass from wool to polythene? [NCERT]
8. Determine the total charge on 75.0 kg of electrons.
9. How many mega coulombs of positive (or negative) charge are present in 2.0 mole of neutral hydrogen (H_2) gas?
10. If 10^9 electrons move out of a body to another body every second, how much time is required to get a total charge of 1 C on the other body? [NCERT]
11. How much positive and negative charge is there in a cup of water? [NCERT]