LAKSHYA (JEE)

Electric Charges and Field

DPP-04

1. Three equal charges are placed on the three corners of a square. If the force between q_1 and q_2 is F_{12} and that between q_1 and q_3 is F_{13}, the ratio of magnitudes $\frac{F_{12}}{F_{13}}$

(A) 1 / 2 (B) 2

(C) $1/\sqrt{2}$ (D) $\sqrt{2}$

2. Two similar spheres having charge $+q$ and $-q$ are kept at a certain distance. F force acts between the two. If in the middle of two spheres, another similar sphere having $+q$ charge is kept, then it experiences a force in magnitude and direction as

(A) Zero having no direction

(B) $8F$ towards $+q$ charge

(C) $8F$ towards $-q$ charge

(D) $4F$ towards $+q$ charge

3. The force between two charges 0.06 m apart is 5 N. If each charge is moved towards the other by 0.01 m, then the force between them will become

(A) 7.20 N (B) 11.25 N

(C) 22.50 N (D) 45.00 N

4. Two-point charges +3 μC and +8 μC repel each other with a force of 40 N. If a charge of –5 μC is added to each of them, then the force between them will become

(A) –10 N (B) +10 N

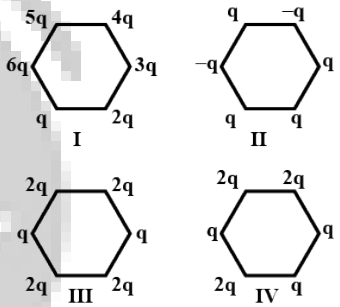
(C) +20 N (D) –20 N

5. Two point charges + 9e and +e are kept 16 cm. apart from each other. Where should a third charge q be placed between them so that the system is in equilibrium state :

(A) 24 cm from + 9e (B) 12 cm from +9e

(C) 24 cm from + e (D) 12 cm from + e

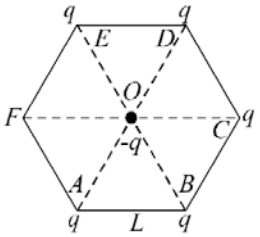
6. Figures below show regular hexagon, the charges are placed at the vertices. In which of the following cases the electric field at the centre is zero.



(A) IV (B) III

(C) I (D) II

7. Five point charges, each of value $+q$ coulomb, are placed on five vertices of a regular hexagon of side L metre. The magnitude of the force on the point charge of value $-q$ coulomb placed at the centre of the hexagon is ..... newton.



ANSWERS

1. **(B)**
2. **(C)**
3. **(B)**
4. **(A)**
5. **(B)**
6. **(B)**
7. **Kq^2/L^2**

Note - If you have any query/issue

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