



### **PHYSICS**

## BOOKS - PUNJAB BOARD PREVIOUS YEAR PAPERS

# Electric Charges and Electrostatic Force



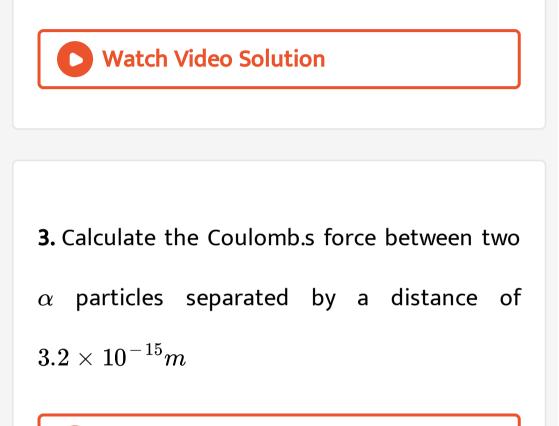
1. Force of attractio between two point electric charges placed at a distance .d. in a medium is F. What distance apart should these be kept in the same medium, so that between them beComes F/3

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**2.** If the distance between two equal points charges is doubled and their individual

charges are also doubled, what would happen

to the force between them?





**4.** Ten electrons have been removed from each atom to form ions. Find the electrostatic force between two such ions when separated by a distance of  $4\overset{\circ}{A}$  in a medium of dielectric Constant 4.

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**5.** Five electrons have been removed from each atom to form ions. Find the electrostatic force between two such ions when separated by a

distance of  $2 \stackrel{\,\,{}_\circ}{A}$  in a medium of dielectric

Constant4.



**6.** Twenty electrons have been removed from each atom to form ions. Find the electrostatic force between two such ions when separated by a distance of  $8\overset{\circ}{A}$  in a medium of dielectric Constant4.



7. Two similar charges repel each other with a

force of 44.1 Newton when placed 2cm apart in

air. Calculate the strength of charge.



**8.** What is the Coulomb.s force between two small charged spheres having charges  $2.0 \times 10^{-7}$  C and  $3.0 \times 10^{-7}$  Coulomb placed 30 cm in air.

**9.** Find the electrostatic force between two protons placed in free space separated by distance 20 cm.



#### 10. Calculate the Coulomb.s force between two

- lpha particles separated by a distance of
- $3.2 imes 10^{-15}m$

11. Calculate the Coulomb.s force between two lpha particles separated by a distance of  $3.2 imes 10^{-15} m$ 

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12. calculate the Coulomb.s force between two

protons separated by  $1.6 imes 10^{-15}m$ 

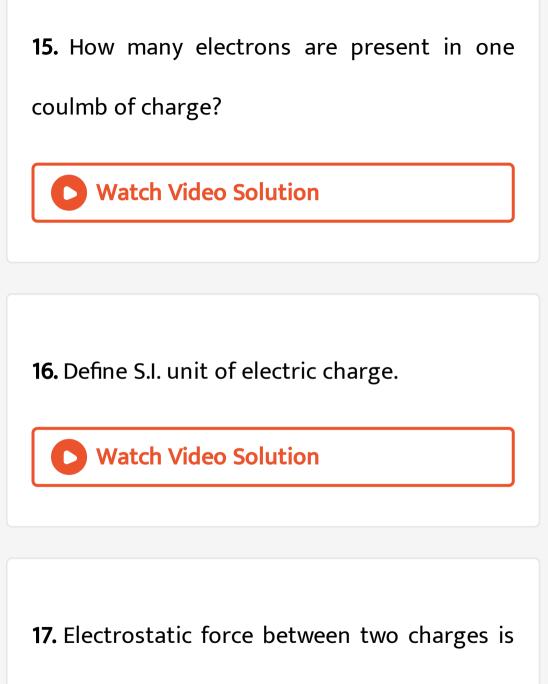
13. calculate the Coulomb.s force between a proton and electroon separated by  $0.8 imes 10^{-15} m$ 

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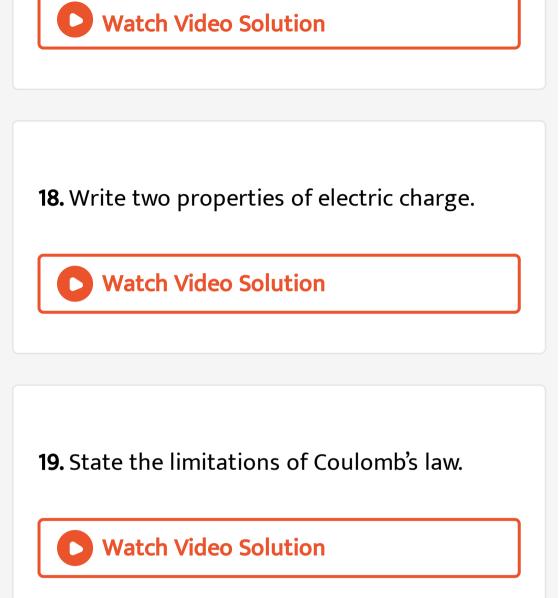
14. In Coulomb's law, on what factors the value

of electrostatic force Constant 'K' depends ?





called central force.Why?



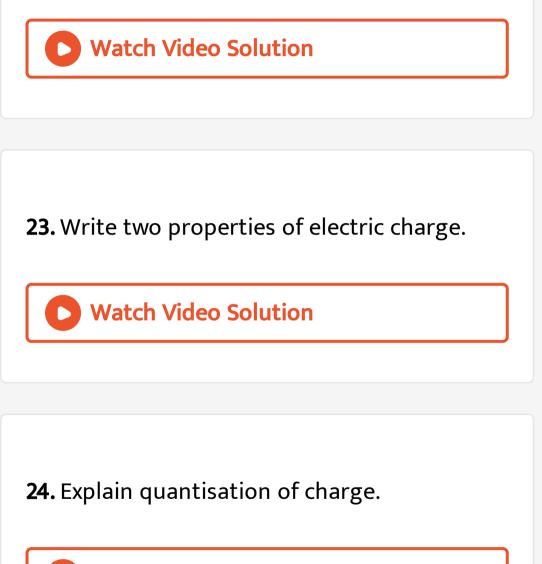
20. Write a relation between absolute and

relative electrical permittivity of a medium.

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**21.** Write a relation for the electrostatic force between two point charges placed in a dielectric medium.

22. Define dielectric Constant of a medium.



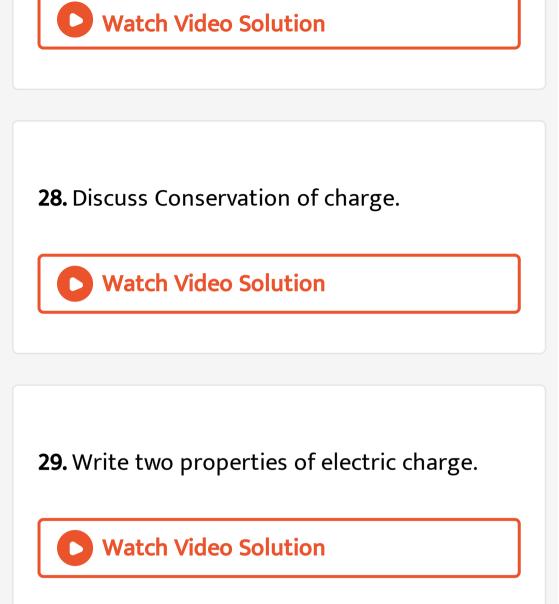
**25.** A charged rod P attracts rod R whereas P repels another charged rod Q.What type of force is developed between Q and R ?

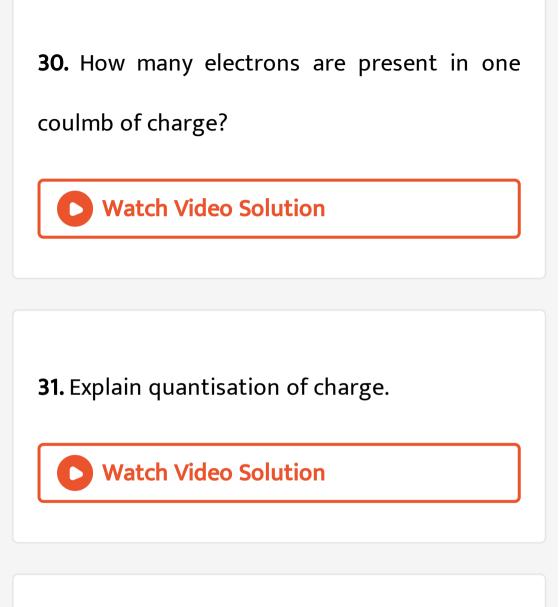


#### **26.** Define S.I. unit of electric charge.



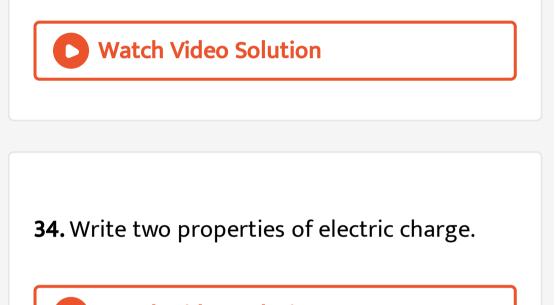
27. Explain quantisation of charge.





**32.** Explain quantisation of charge.

**33.** Give four properties of electric charge.



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**35.** State Coulomb's law in electrostatics.

36. What do you mean by quantisation and

Conservation of charge ?



#### 37. Give two differences between gravitational

and electrostatic forces.



**38.** State principle-of superposition of charges and using it find an expression for force acting at a point charge due to assembly of 'n' point charges.

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39. State Coulomb's law, explain its vector form

and define SI unit of electric charge. State two

limitations of Coulomb's law.

