

Electrovalent bonding

1. (b) NaCl is ionic crystal so it is formed by Na^+ and Cl^- ions.
2. (a) Bond formation is always exothermic. Compounds of sodium are ionic.
3. (a) According to Fajan's rule ionic character is less.
4. (c) Valencies of L , Q , P and R is -2 , -1 , $+1$ and $+2$ respectively so they will form P_2L , RL , PQ and RQ_2 .
5. (c) Electrovalent compounds are good conductor of heat and electricity in molten state or in aqueous solution.
6. (d) Electrically charged atoms or group of atoms

Explanation:

An electrovalent (ionic) compound is formed by the transfer of electrons from one atom to another. The atom that loses electrons becomes a positively charged ion (cation), while the atom that gains electrons becomes a negatively charged ion (anion). These oppositely charged ions are held together by strong electrostatic forces of attraction, forming an ionic compound.

Example: $\text{Na} + \text{Cl} \rightarrow \text{Na}^+ + \text{Cl}^- \rightarrow \text{NaCl}$

7. (d) Electrovalent bond formation depends on ionization energy of cation, electron affinity of anion and on lattice energy.
8. (b) Because CsF is electrovalent compound.



9. (c) $NaCl$ is formed by electrovalent bonding.
10. (d) Valency of metal is + 2 by formula MO so its phosphate would be $M_3(PO_4)_2$ because valency of $[PO_4]$ is -3 .
11. (b) Li , Na and K are alkali metals with low ionization energy and one electron in their outermost shell so they will form cation easily.
12. (a) Melting point and boiling point of electrovalent compounds are high due to strong electrostatic force of attraction between the ions.
13. (d) The value of lattice energy depends on the charges present on the two ions and distance between them. It shall be high if charges are high and ionic radii are small.
14. (a) Cs is more electropositive.
15. (a) X loses electron, Y gains it.
16. (c) Formation of $NaCl$ occurs by Na_{ion}^+ and Cl_{ion}^- .
17. (b) $MgCl_2$ has electrovalent linkage because magnesium is electropositive metal while chlorine is electronegative.
18. (a) Electrovalent compounds generally have high m.pt and high b.pt due to stronger coulombic forces of attractions.
19. (d) Water is a polar solvent so it decreases the interionic attraction in the crystal lattice due to solvation.





20. (c) Element C has electronic structure $1s^2, 2s^2 2p^5$, it requires only one electron to complete its octet and it will form anion so it will form electrovalent bond.

