NaCl structure

Na (Z = 11) 1s² 2s²p⁶ 3s¹ or [Ne] 3s¹
Cl (Z = 17) 1s² 2s²p⁶ 3s²p⁵ or [Ne] 3s²p⁵

forms Na⁺ and Cl⁻ and combines as ionic bond.

Na⁺ → [Ne]
Cl⁻ → [Ar]

Na⁺ exert an electrostatic attractive force upon its six Cl⁻ nearest neighbours.
Cl⁻ repels Cl⁻
Na⁺ repels Na⁺
and ultimately a balance is reached and
a lattice is formed.

Since all electrons in Na⁺ and Cl⁻ are
rigidly bound to atoms, NaCl is a very
good insulator.

But why salt water conducts?
Metalllic Bond

In a metal atom the outer electronic shell is only partially filled, usually no more than 3 electrons.

Loosely bound with core atom.

Atoms readily give them up to the lattice. So that the metal solids are made up of ions with closed shells immersed in a sea of free electrons. The forces holding the lattice together arise from the interaction between the +ve ion cores and the surrounding free electrons.
\[ \text{Cu} (Z = 29) = [Ar] 3d^{10} 4s^1 \]

\[ \text{Ar} (Z = 18) = 1s^2 2s^2 2p^6 3s^2 3p^6 \]