Electrovalent bonding

41. (c) $M - X$ bond is a strongest bond so between $Na - Cl$ is a strongest bond.

42. (b) The solubility order is :
$BeF_2 > MgF_2 > CaF_2 > SrF_2$ so SrF_2 is least soluble.

43. (d) *NaF* has maximum melting point, melting point decreases of sodium halide with increase in size of halide their bond energy get lower.

44. (b) Sulphanilic acids have bipolar structure so their melting point is high and insoluble in organic solvents.

45. (c) $CaCl_2$ will have electrovalent bonding because calcium is electropositive metal while chlorine is electronegative so they will combined with electrovalent bond.

46. (c) Electrostatic force of attraction

Explanation:
In an **electrovalent (ionic) bond**, atoms are held together by the **electrostatic force of attraction** between **positively charged cations** and **negatively charged anions**. This strong force binds the ions in a regular arrangement, forming a **crystal lattice**.

Example:
In sodium chloride (NaCl), **Na^+** and **Cl^-** ions are held together by **electrostatic attraction**, forming a stable ionic compound.

47. (a) Electrovalent bond is formed by losing electrons from one atom and gaining electron by other atom *i.e.* redox reaction.

48. (b) Electrovalent compound are polar in nature because they are formed by ions.

49. (c) Directional properties

Explanation:
Ionic bonds are **non-directional** because the **electrostatic force of attraction** between oppositely charged ions acts **equally in all directions** around each ion. As a result, ionic compounds do not have directional properties.

They are, however:

- **Hard and brittle** in nature,
- Have **high melting and boiling points**, and
- Are **soluble in polar solvents** like water.

50. (b) $CsCl$ has ionic bonding.

51. (b) As soon as the electronegativity increases, ionic bond strength increases.

52. (b) This *X* element is a second group element so its chloride will be XCl_2.

53. (a) When electronegativity difference is from 1.7 to 3.0. This bond is called as ionic bond.

54. (a) Ethyl chloride is an organic compound so it will be covalent.

55. (a) Lithium oxide and calcium fluoride show ionic characters.

57. (a) Generally cation and anion form ionic bond.

58. (c) Those atoms which contain +*ve* and –*ve* sign are known as ion.

59. (a) Generally *Br-F* contain maximum electronegativity difference compare to other compound.

60. (c) The charges

Explanation:
The interionic attraction in an ionic compound depends mainly on the magnitude of the charges present on the ions. The greater the charges on the ions, the stronger the electrostatic force of attraction between them.

According to Coulomb's law:
$F \propto (q_1 \times q_2) / r^2$

where q_1 and q_2 are the charges on the ions, and r is the distance between them. Therefore, interionic attraction increases with higher ionic charges and decreases with greater distance between ions.