

Electronic configuration of the following element is given

Sodium(Na) = [2,8,1]

Carbon (C) = [2,4]

Chlorine (Cl) = [2,8,7]

Hydrogen (H) = [1]

Lithium (Li) = [2, 1]

State which of the following compound will have (a) highest melting point, (b) are soluble in petrol (organic solvent) (c) can conduct electricity in molten state

1. Lithium chloride,
2. Hydrogen chloride,
3. Sodium chloride,
4. Sodium hydride,
5. Carbon tetrachloride

Encircle the correct work from the brackets for the following sentences:

The bond between two elements in group VIIA of the periodic table is likely to be [ionic /covalent]. In the reaction between chlorine and potassium iodide (KI) chlorine is [oxidised /reduced]. The covalent molecule containing three single covalent is [water/ methane/ ammonia]. The molecule of water combines with a [hydrogen atom/ proton / hydrogen molecule] to form hydronium ion. For the formation of electrovalent bond between 'X' and 'Y', which are metal and non-metal respectively, X should have a [high / low] ionisation potential and Y should have [high/ low] electron affinity. Water is a [polar/non-polar] [ionic /metallic/covalent] compound in which the atoms of [hydrogen / oxygen] attracts electrons more strongly towards itself. The water molecule shows the presence of [double /one single/ two single] covalent bond and [one /two / three] lone pair of electrons present in the [hydrogen /oxygen] atoms.

A compound has a formula 'H₂X', where Y denotes a non-metal, state the following for H₂X

1. The electronic configuration of X
2. The valency of X
3. The bonding present in H₂X
4. The bonding present in the compound formed between potassium [³⁹K₁₉] and X
5. The formula of the compound formed between calcium ⁴⁰Ca₂₀] and X

Complete the table given below:

Element-1	Element-2	Types of bonds	Formula of compound
A atomic number=20	B atomic number=8		
C atomic number=9	D atomic number=9		
E atomic number=12	F atomic number=16		
G atomic number=11	H atomic number=17		
I atomic number=1	J atomic number=16		
K atomic number=20	L atomic number=9		

Arrange the following elements as per the guidelines in the brackets.

- Na, Cl, Mg, P [in decreasing order of atomic size]
Ca, Li, f, N [in increasing order of number of electronegativity]
Cl, Al, Na, S [in increasing order of number of ionisation potential]
Li, F, C, O [in increasing order of electron affinity]
Ar, He, Ne, Kr [in increasing order of number of shells]

Give reason for the following:

1. Atomic radii decreases across the period
2. Properties of elements are periodic function of their atomic number and not atomic weight
3. Atomic size of an element depends on the nuclear charge of that element
4. Across a period ionisation potential should increase