

### Covalent bonding

21. Which of the following compounds are covalent
- (a)  $H_2$  (b)  $CaO$   
(c)  $KCl$  (d)  $Na_2S$
22. Indicate the nature of bonding in  $CCl_4$  and  $2s$
- (a) Covalent in  $CCl_4$  and electrovalent in  $CaH_2$   
(b) Electrovalent in both  $CCl_4$  and  $CaH_2$   
(c) Covalent in both  $CCl_4$  and  $CaH_2$   
(d) Electrovalent in  $CCl_4$  and covalent in  $CaH_2$
23. If the atomic number of element  $X$  is 7, the best electron dot symbol for the element is
- (a)  $X.$  (b)  $.X.$   
(c)  $\cdot\ddot{X}:$  (d)  $:\ddot{X}.$
24. Which is the most covalent
- (a)  $C - O$  (b)  $C - Br$   
(c)  $C - S$  (d)  $C - F$
25. The covalent compound  $HCl$  has the ionic character as
- (a) The electronegativity of hydrogen is greater than that of chlorine  
(b) The electronegativity of hydrogen is equal to that of chlorine  
(c) The electronegativity of chlorine is greater than that of hydrogen  
(d) Hydrogen and chlorine are gases
26. The correct sequence of increasing covalent character is represented by
- (a)  $LiCl < NaCl < BeCl_2$   
(b)  $BeCl_2 < NaCl < LiCl$   
(c)  $NaCl < LiCl < BeCl_2$   
(d)  $BeCl_2 < LiCl < NaCl$
27. Bond energy of covalent  $O - H$  bond in water is
- (a) Greater than bond energy of  $H - bond$   
(b) Equal to bond energy of  $H - bond$   
(c) Less than bond energy of  $H - bond$   
(d) None of these
28. Solid  $CH_4$  is
- (a) Molecular solid  
(b) Ionic solid  
(c) Pseudo solid  
(d) Does not exist



29. A covalent bond is likely to be formed between two elements which
- Have similar electronegativities
  - Have low ionization energies
  - Have low melting points
  - Form ions with a small charge
30. The bond between two identical non-metal atoms has a pair of electrons
- Unequally shared between the two
  - Transferred fully from one atom to another
  - With identical spins
  - Equally shared between them
31. The valency of phosphorus in  $H_3PO_4$  is
- 2
  - 5
  - 4
  - 1
32. Which of the following substances has covalent bonding
- Germanium
  - Sodium chloride
  - Solid neon
  - Copper
33. The covalency of nitrogen in  $HNO_3$  is
- 0
  - 3
  - 4
  - 5
34. Hydrogen chloride molecule contains
- Covalent bond
  - Double bond
  - Coordinate bond
  - Electrovalent bond
35. As compared to covalent compounds, electrovalent compounds generally have
- Low melting points and low boiling points
  - Low melting points and high boiling points
  - High melting points and low boiling points
  - High melting points and high boiling points
36. The interatomic distances in  $H_2$  and  $Cl_2$  molecules are 74 and 198 pm respectively. The bond length of  $HCl$  is
- 272 pm
  - 136 pm
  - 124 pm
  - 248 pm
37. On analysis, a certain compound was found to contain iodine and oxygen in the ratio of 254gm of iodine and 80gm of oxygen. The atomic mass of iodine is 127 and that of oxygen is 16. Which





of the following is the formula of the compound

- (a)  $IO$  (b)  $I_2O$   
(c)  $I_5O_2$  (d)  $I_2O_5$

38. Ionic and covalent bonds are present in

- (a)  $CCl_4$  (b)  $CaCl_2$   
(c)  $NH_4Cl$  (d)  $H_2O$

39. Highest covalent character is found in

- (a)  $CaF_2$  (b)  $CaCl_2$   
(c)  $CaBr_2$  (d)  $CaI_2$

40. Among the following which property is commonly exhibited by a covalent compound

- (a) High solubility in water  
(b) High electrical conductance  
(c) Low boiling point  
(d) High melting point

