

- Which forms a crystal of  $NaCl$ ?  
(a)  $NaCl$  molecules (b)  $Na^+$  and  $Cl^-$  ions  
(c)  $Na$  and  $Cl^-$  atoms (d) None of the above
- When sodium and chlorine react then  
(a) Energy is released and ionic bond is formed  
(b) Energy is released and a covalent bond is formed  
(c) Energy is absorbed and ionic bond is formed  
(d) Energy is absorbed and covalent bond is formed
- Which one is least ionic in the following compounds?  
(a)  $AgCl$  (b)  $KCl$  (c)  $BaCl_2$  (d)  $CaCl_2$
- The electronic configuration of four elements  $L, P, Q$  and  $R$  are given in brackets  
 $L(1s^2, 2s^2 2p^4), Q(1s^2, 2s^2 2p^6, 3s^2 3p^5)$   
 $P(1s^2, 2s^2 2p^6, 3s^1), R(1s^2, 2s^2 2p^6, 3s^2)$   
The formulae of ionic compounds that can be formed between these elements are  
(a)  $L_2P, RL, PQ$  and  $R_2Q$  (b)  $LP, RL, PQ$  and  $RQ$   
(c)  $P_2L, RL, PQ$  and  $RQ_2$  (d)  $LP, R_2L, P_2Q$  and  $RQ$
- Electrovalent compound's  
(a) Melting points are low.  
(b) Boiling points are low  
(c) Conduct current in fused state  
(d) Insoluble in polar solvent
- An electrovalent compound is made up of  
(a) Electrically charged molecules  
(b) Neutral molecules  
(c) Neutral atoms  
(d) Electrically charged atoms or group of atoms
- Electrovalent bond formation depends on  
(a) Ionization energy (b) Electron affinity  
(c) Lattice energy (d) All the three above
- In the following which substance will have highest boiling point?  
(a)  $He$  (b)  $CSF$  (c)  $NH_3$  (d)  $CHCl_3$
- An atom of sodium loses one electron and chlorine atom accepts one electron. This result in the formation of sodium chloride molecule. This type of molecule will be  
(a) Coordinate (b) Covalent  
(c) Electrovalent (d) Matallic bond
- Formula of a metallic oxide is  $MO$ . The formula of its phosphate will be  
(a)  $M_2(PO_4)_2$  (b)  $M(PO_4)$   
(c)  $M_2PO_4$  (d)  $M_3(PO_4)_2$
- From the following which group of elements easily forms cation  
(a)  $F, Cl, Br$  (b)  $Li, Na, K$   
(c)  $O, S, Se$  (d)  $N, P, As$
- Which type of compounds show high melting and boiling points  
(a) Electrovalent compounds  
(b) Covalent compounds  
(c) Coordinate compounds  
(d) All the three types of compounds have equal melting and boiling points

13. Lattice energy of an ionic compound depends upon  
 (a) Charge on the ion only  
 (b) Size of the ion only  
 (c) Packing of ions only  
 (d) Charge on the ion and size of the ion
14. In the given bonds which one is most ionic  
 (a)  $Cs - Cl$             (b)  $Al - Cl$             (c)  $C - Cl$             (d)  $H - Cl$
15. Element  $x$  is strongly electropositive and  $y$  is strongly electronegative. Both elements are univalent, the compounds formed from their combination will be  
 (a)  $x^+y^-$             (b)  $x^-y^+$             (c)  $x - y$             (d)  $x \rightarrow y$
16. In the formation of  $NaCl$  from  $Na$  and  $Cl$   
 (a) Sodium and chlorine both give electrons  
 (b) Sodium and chlorine both accept electrons  
 (c) Sodium loses electron and chlorine accepts electron  
 (d) Sodium accepts electron and chlorine loses electron
17. Which of the following is an electrovalent linkage?  
 (a)  $CH_4$             (b)  $MgCl_2$             (c)  $SiCl_2$             (d)  $BF_3$
18. Electrovalent compounds do not have  
 (a) High M.P. and Low B.P.            (b) High dielectric constant  
 (c) High M.P. and High B.P.            (d) High polarity
19. Many ionic crystals dissolve in water because  
 (a) Water is an amphiprotic solvent  
 (b) Water is a high boiling liquid  
 (c) The process is accompanied by a positive heat of solution  
 (d) Water decreases the interionic attraction in the crystal lattice due to solvation
20. The electronic structure of four elements  $A, B, C, D$  are  
 (A)  $1s^2$             (B)  $1s^2, 2s^2, 2p^2$   
 (C)  $1s^2, 2s^2, 2p^5$             (D)  $1s^2, 2s^2, 2p^6$
- The tendency to form electrovalent bond is largest in  
 (a) A            (b) B            (c) C            (d) D
21. Chloride of metal is  $MCl_2$ . The formula of its phosphate will be  
 (a)  $M_2PO_4$             (b)  $M_3(PO_4)_2$   
 (c)  $M_2(PO_4)_3$             (d)  $MPO_4$
22. The phosphate of a metal has the formula  $MPO_4$ . The formula of its nitrate will be  
 (a)  $MNO_3$             (b)  $M_2(NO_3)_2$   
 (c)  $M(NO_3)_2$             (d)  $M(NO_3)_3$
23. In the transition of  $Zn$  atoms to  $Zn^{++}$  ions there is a decrease in the  
 (a) Number of valency electrons  
 (b) Atomic weight  
 (c) Atomic number  
 (d) Equivalent weight
24. Phosphate of a metal  $M$  has the formula  $M_3(PO_4)_2$ . The formula for its sulphate would be  
 (a)  $MSO_4$             (b)  $M(SO_4)_2$   
 (c)  $M_2(SO_4)_3$             (d)  $M_3(SO_4)_2$
25. The molecular formula of chloride of a metal  $M$  is  $MCl_3$ . The formula of its carbonate would be  
 (a)  $MCO_3$             (b)  $M_2(CO_3)_3$

- (c)  $M_2CO_3$                       (d)  $M(CO_3)_2$
26. Sodium chloride easily dissolves in water. This is because  
 (a) It is a covalent compound  
 (b) Salt reacts with water  
 (c) It is a white substance  
 (d) Its ions are easily solvated
27. When  $NaCl$  is dissolved in water the sodium ion becomes  
 (a) Oxidized                      (b) Reduced  
 (c) Hydrolysed                      (d) Hydrated
28. Solid  $NaCl$  is a bad conductor of electricity since  
 (a) In solid  $NaCl$  there are no ions  
 (b) Solid  $NaCl$  is covalent  
 (c) In solid  $NaCl$  there is no motion of ions  
 (d) In solid  $NaCl$  there are no electrons
29. Favourable conditions for electrovalency are  
 (a) Low charge on ions, large cation, small anion  
 (b) High charge on ions, small cation, large anion  
 (c) High charge on ions, large cation, small anion  
 (d) Low charge on ions, small cation, large anion
30. The sulphate of a metal has the formula  $M_2(SO_4)_3$ . The formula for its phosphate will be  
 (a)  $M(HPO_4)_2$                       (b)  $M_3(PO_4)_2$   
 (c)  $M_2(PO_4)_3$                       (d)  $MPO_4$
31. Ionic bonds are usually formed by combination of elements with  
 (a) High ionisation potential and low electron affinity  
 (b) Low ionisation potential and high electron affinity  
 (c) High ionisation potential and high electron affinity  
 (d) Low ionisation potential and low electron affinity
32. Molten sodium chloride conducts electricity due to the presence of  
 (a) Free electrons  
 (b) Free ions  
 (c) Free molecules  
 (d) Atoms of sodium and chlorine
33. The phosphate of a metal has the formula  $MHPO_4$ . The formula of its chloride would be  
 (a)  $MCl$                       (b)  $MCl_2$                       (c)  $MCl_3$                       (d)  $M_2Cl_3$
34. A number of ionic compounds e.g.  $AgCl, CaF_2, BaSO_4$  are insoluble in water. This is because  
 (a) Ionic compounds do not dissolve in water  
 (b) Water has a high dielectric constant  
 (c) Water is not a good ionizing solvent  
 (d) These molecules have exceptionally high alternative forces in the lattice
35. What is the nature of chemical bonding between  $Cs$  and  $F$ ?  
 (a) Covalent                      (b) Ionic  
 (c) Coordinate                      (d) Metallic
36. Which one of the following compound is ionic?  
 (a)  $KCl$                       (b)  $CH_4$   
 (c) Diamond                      (d)  $H_2$
37. Which of the following compound has electrovalent linkage?  
 (a)  $CH_3Cl$                       (b)  $NaCl$

- (c)  $CH_4$                       (d)  $Cl_2$
38. An ionic compound is generally a  
 (a) Good electrolyte                      (b) Weak electrolyte  
 (c) Non-electrolyte                      (d) Neutral
39. When metals combine with non-metals, the metal atom tends to  
 (a) Lose electrons  
 (b) Gain electrons  
 (c) Remain electrically neutral  
 (d) None of these
40. Chemical formula for calcium pyrophosphate is  $Ca_2P_2O_7$ . The formula for ferric pyrophosphate will be  
 (a)  $Fe(P_2O_7)_3$                       (b)  $Fe_4P_4O_{14}$   
 (c)  $Fe_4(P_2O_7)_3$                       (d)  $Fe_3PO_4$
41. Among the bonds formed by a chlorine atom with atoms of hydrogen, chlorine, sodium and carbon, the strongest bond is formed between  
 (a)  $H - Cl$                       (b)  $Cl - Cl$   
 (c)  $Na - Cl$                       (d)  $C - Cl$
42. Which of the following is least soluble  
 (a)  $BeF_2$                       (b)  $SrF_2$   
 (c)  $CaF_2$                       (d)  $MgF_2$
43. Which of the following halides has maximum melting point  
 (a)  $NaCl$                       (b)  $NaBr$   
 (c)  $NaI$                       (d)  $NaF$
44. The high melting point and insolubility in organic solvents of sulphanilic acid are due to its ..... structure.  
 (a) Simple ionic                      (b) Bipolar ionic  
 (c) Cubic                      (d) Hexagonal
45. Out of the following, which compound will have electrovalent bonding  
 (a) Ammonia                      (b) Water  
 (c) Calcium chloride                      (d) Chloromethane
46. The force which holds atoms together in an electrovalent bond is  
 (a) Vander Waal's force  
 (b) Dipole attraction force  
 (c) Electrostatic force of attraction  
 (d) All the above
47. The main reaction during electrovalent bond formation is  
 (a) Redox reaction                      (b) Substitution reaction  
 (c) Addition reaction                      (d) Elimination reaction
48. Electrovalent compounds are  
 (a) Good conductors of electricity  
 (b) Polar in nature  
 (c) Low M.P. and low B.P.  
 (d) Easily available
49. Ionic compounds do not have  
 (a) Hard and brittle nature  
 (b) High melting and boiling point  
 (c) Directional properties  
 (d) Soluble in polar solvents

50. Highest melting point would be of

- (a)  $He$                       (b)  $CsCl$   
(c)  $NH_3$                       (d)  $CHCl_3$

**Answer Key:**

Que	1	2	3	4	5
Ans	b	a	a	c	c
Que	6	7	8	9	10
Ans	d	d	b	c	d
Que	11	12	13	14	15
Ans	b	a	d	a	a
Que	16	17	18	19	20
Ans	c	b	a	d	c
Que	21	22	23	24	25
Ans	b	d	a	a	b
Que	26	27	28	29	30
Ans	d	d	c	a	d
Que	31	32	33	34	35
Ans	b	b	b	d	b
Que	36	37	38	39	40
Ans	a	b	a	a	c
Que	41	42	43	44	45
Ans	c	b	d	b	c
Que	46	47	48	49	50
Ans	c	a	b	c	b