



CHEM PRACTICAL QUESTION FOR GRADE 9

I. CHOOSE THE BEST ANSWER FROM THE GIVEN ALTERNATIVES

1. Cation and anion combines in a crystal to form following type of compound
 - A. Ionic
 - B. metallic
 - C. covalent
 - D. dipole-dipole
2. Name the neutral atom in the Periodic Table which has the same number of electrons as K^+ and Cl^- .
 - A. Helium
 - B. Argon
 - C. Neon
 - D. Krypton
3. Complete the following statement by choosing the appropriate option. Ionic bonds will be formed more easily between elements with comparatively A and elements with comparatively high negative value of B .
 - A. A = low electronegativity B = ionization enthalpy
 - B. A = low ionization enthalpy B = electron gain enthalpy
 - C. A = high ionization enthalpy B = electron gain enthalpy
 - D. A = high electronegativity B = ionization enthalpy
4. An atom of an element has the electronic configuration 2,8,2. To which group does it belong?
 - A. 4th group
 - B. 6th group
 - C. 3rd group
 - D. 2nd group
5. The screening effect of inner electrons of the nucleus causes
 - A. A decrease in the ionization potential
 - B. An increase in the ionization potential
 - C. No effect on the ionization potential
 - D. An increase in the attraction of the nucleus to the electrons

6. The electronegativity of O, F, N, Cl and H are 3.5, 4.0, 3.2, 3.0 and 2.1 respectively. The strongest bond will be:
A. F-O B. O-Cl C. N-H D. O-H
7. Which of the following statements is correct
A. X^- ion is larger in size than X atom
B. X^+ ion is larger in size than X atom
C. X^+ ion is larger in size than X^- ion
D. X^+ and X^- ions are equal in size
8. What is a covalent bond?
A. A bond formed between oppositely charged ions
B. A bond formed when two atoms share a pair of electrons
C. A bond formed by delocalised electrons
9. Order of electron affinity of F, Cl, Br and I is
A. $F < Cl > Br > I$ B. $F > Cl > Br > I$ C. $F < Cl < Br < I$ D. $F > Cl < Br > I$
10. The properties of eka-aluminium predicted by Mendeleev are the same as the properties of later discovered element:
A. Scandium B. Germanium C. Gallium D. Aluminium
11. On going from right to left in a period in the periodic table the electronegativity of the elements
A. Increases B. Decreases C. Remain unchanged D. Decreases first then increases
12. With regard to the species $^{16}O^{2-}$, $^{19}F^-$ and ^{20}Ne , which of the following statements is correct?
A. All three species contain 10 electrons.
B. The sum of the neutrons in all three species is 27.
C. The sum of the protons in all three species is 28.
D. Both $^{19}F^-$ and ^{20}Ne contain 20 neutrons.
E. none of the above
13. Which of the following statements is incorrect?
A. Cesium is the most electropositive element while F is the most electronegative element
B. Cl has the highest -ve electron gain enthalpy out of all the elements
C. Electron gain enthalpy of N as well as that of noble gases is positive
D. In any period, the atomic radius of the noble gas is lowest
14. Elements of which group form anions most readily?
A. Oxygen family

- B. Nitrogen family
 - C. Halogens
 - D. Alkali metals
15. Which of the following statement concerning ionization energy is not correct?
- A. The IE_2 is always more than the first.
 - B. Within a group, there is a gradual increase in ionization energy because nuclear charge increases.
 - C. Ionization energy of Be is more than B.
 - D. Ionization energy of noble gases are high.
16. An atom with high electronegativity has
- A. Large size
 - B. High ionization energy
 - C. Low electron affinity
 - D. Low ionization potential
17. Point out the wrong statement : On moving horizontally from left to right across a period in the periodic table
- A. Metallic character decreases
 - B. Electronegativity increases
 - C. Gram atomic volume first decreases and then increases
 - D. Size of the atoms increases for normal elements
18. The property of attracting electrons by the halogen atom in a molecule is called
- A. Ionization potential
 - B. Electron affinity
 - C. Electronegativity
 - D. Electronic attraction
19. In third row of periodic table from Na to Cl
- A. Electronegativity increases
 - B. Electronegativity decreases
 - C. Ionization energy decreases
 - D. Atomic volume increases
20. Which of the following is the most electropositive element
- A. Aluminium
 - B. Magnesium
 - C. Phosphorus
 - D. Sulphur

21. Which electron configuration is not correct?
 A. $O^{2-} [He]2s^2 2p^6$ B. $Mg^{2+} [He]2s^2 2p^6$ C. $V^{3+} [Ar]3d^2$ D. $Al^{3+} [Ar]2s^2 2p^6$
22. The noble gases have
 A. high ionization energies.
 B. high electron affinities.
 C. large atomic radii.
 D. a tendency to form both cations and anions.
23. The correct order of electropositive nature of Li, Na and K is
 A. $Li > Na > K$ C. $Na > K > Li$
 B. $Li > K > Na$ D. $K > Na > Li$
 E. none
24. In Mendeleev's Periodic Table, gaps were left for the elements to be discovered later. Which of the following elements found a place in the Periodic Table later?
 A. Chlorine B. Silicon C. Oxygen D. Germanium
25. In general, the properties that decrease and increase down a group in the periodic table, respectively are
 A. electronegativity and atomic radius
 B. electronegativity and electron gain enthalpy
 C. electron gain enthalpy and electronegativity
 D. atomic radius and electronegativity
26. Which among the following sets of groups consist elements with high chemical reactivity?
 A. Groups-1 and 11 B. Groups-11 and 17 C. Groups-1 and 17 D. Groups-11 and 18
27. The reactivity of non-metals within a group in the periodic table
 A. increases down the group
 B. decreases down the group
 C. first increase then decrease down the group
 D. first decreases then increases down the group
28. Electronegativity is a measure of the capacity of an atom to
 A. Attract electrons B. Attract protons C. Repel electrons D. Repel protons
29. Ionisation enthalpy increases across the second period as we move from Li to F. This is because

- A. shielding of the nuclear charge by the inner core of electrons increases very much from Li to F.
 - B. increasing nuclear charge outweighs the shielding.
 - C. increase in shielding outweighs the increasing nuclear charge.
 - D. Both (a) and (b)
30. What effect is observed, on the size of an atom when an electron is removed and in another case when an electron is added to the same atom?
- A. Size increases and decreases respectively
 - B. Size decreases and increases respectively
 - C. Size increases in both cases
 - D. Size decreases in both cases
31. The maximum chemical reactivity of the elements at the extreme left and at the extreme right of the periodic table is exhibited
- A. by the gain of an electron to form an anion and the loss of an electron to form a cation respectively.
 - B. by the loss of an electron to form a cation and the gain of an electron to form an anion respectively.
 - C. by the loss of electrons to form cations in both cases.
 - D. by the gain of electrons to form an anion in both cases.
32. Out of the four blocks in which periodic table is divided, helium belongs to which block?
- A. s-block B. p-block C. d-block D. f-block
33. Elements are classified into four blocks as s-block, p-block, d-block and f-block on the basis of
- A. atomic number B. atomic mass C. atomic orbitals D. All of these
34. Which of the following statements related to the modern periodic table is incorrect?
- A. The p-block has 6 columns, because a maximum of 6 electrons can occupy all the orbitals in a p-shell
 - B. The d-block has 8 columns because a maximum of 8 electrons can occupy all the orbitals in a d-subshell
 - C. Each block contains a number of columns equal to the number of electrons that can occupy that subshell

- D. The block indicates value of sub-shell for the last subshell that received electrons in building up the electronic configuration
35. Which block of the periodic table contains the element with configuration $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^1$?
- A. s-block B. p-block C. d-block D. f-block
36. The modern periodic table has been divided into
- A. seven periods : three short and four long
 B. nine periods : six short and three long
 C. eighteen periods : four short and four long
 D. nine periods from zero to VIII
37. The size of isoelectronic species; F^- , Ne and Na^+ is affected by
- A. nuclear charge (Z)
 B. valence principal quantum number (n)
 C. electron-electron interaction in the outer orbitals
 D. None of the factors because their size is the same
38. Choose the correct statement
- A. Electronegativity increases down a group
 B. Electronegativity decreases down a group
 C. Electronegativity decreases from left to right along a period
 D. Electronegativity changes along a group but remains constant along a period
39. The attraction that an atom exerts on a pair of electrons that are being shared between that atom and another atom to which it is bonded by a covalent bond is referred to as its
- A. Electron affinity B. Electronegativity C. Ionisation energy D. Valence
40. Choose the correct statement
- A. Electronegativity increases down a group
 B. Electronegativity decreases down a group
 C. Electronegativity decreases from left to right along a period
 D. Electronegativity changes along a group but remains constant along a period
41. Which shows variable valency
- A. s - block elements
 B. p - block elements

- C. d - block elements
 - D. Radioactive elements
42. Which of the statement below best explains why atoms react chemically with each other?
- A. When atoms react, they gain protons and are more stable
 - B. When atoms react, they lose all their electrons and become more stable
 - C. When atoms react, they lose, gain, or share electrons and are then less stable
 - D. When atoms react, they lose, gain, or share electrons to attain a full outer energy level and are then more stable
43. In the periodic table, the metallic character of elements
- A. Decreases from left to right across a period and on descending a group
 - B. Decreases from left to right across a period and increases on descending a group
 - C. Increases from left to right across a period and on descending a group
 - D. Increases from left to right across a period and decreases on descending a group
44. Which compound contains both covalent and ionic bonds?
- A. Sodium carbonate, Na_2CO_3
 - B. Magnesium bromide, MgBr_2
 - C. Dichloromethane, CH_2Cl_2
 - D. Ethanoic acid, CH_3COOH
45. The valency shell of calcium contains
- A. 8 electrons
 - B. 6 electrons
 - C. 4 electrons
 - D. electrons
46. Arrange F, Cl, O, N in the decreasing order of electronegativity
- A. $\text{O} > \text{F} > \text{N} > \text{Cl}$
 - B. $\text{F} > \text{N} > \text{Cl} > \text{O}$
 - C. $\text{Cl} > \text{F} > \text{N} > \text{O}$
 - D. $\text{F} > \text{O} > \text{N} > \text{Cl}$
47. Which of the following have high electron affinity
- A. F
 - B. Cl
 - C. N
 - D. O
48. Which of the following statement is false :-
- A. Elements of $ns^2 np^6$ electronic configuration lies in 1st to 6th period
 - B. Typical elements lies in 3rd period
 - C. The seventh period will accommodate thirty two elements
 - D. Boron and silicon are diagonally related
49. The atom having the valence shell electronic configuration $4s^2 4p^2$ would be in:
- A. Group II A and period 3
 - B. Group II B and period 4
 - C. Group IV A and period 4

D. Group IV A and period 3

50. All of these are characteristics of most ionic compounds in the solid phases EXCEPT,

- A. . High melting point B. high electrical conductivity C. Solubility in water
D. insolubility in organic solvents

51. Which of the following has formed coordinate covalent bond?

- A. H_2O B. NH_4 C. CO_3^{2-} D. Na_2O

52. Which of the following elements will form an ionic bond with chlorine?

- A. Magnesium B. Oxygen C. Phosphorous D. Silicon