Diagnostic Assessment
Chemistry

Multiple choice Questions (Q1 to 11)

(1) Rutherford experiment led to the discovery of

(a) Electrons

(b) Protons

(c) Neutrons

(d) Electrons & Protons.

(2) What is different in the isotopes of an element?

(a) Atomic number

(b) Mass number

(c) Number of electrons

(d) Number of protons

(3) Which quantum number determines the energy of an electron.

(a) Principal quantum number

(b) Spin quantum number

(c) Magnetic quantum number

(d) Azimuthal quantum number.

(4) The electronic configuration of Nitrogen is

(a) $1s^2 2s^2 2p^3$

(b) $1s^2 2s^1 2p^4$

(c) $1s^2 2s^3 2p^3$

(d) $1s^2 2s^3 2p^4$

(5) The element with atomic number 36 belongs to

(a) S-block

(b) P-block

(c) F-block

(d) D-block

(6) Which of the following elements has the highest electro negativity?

    (a) Oxygen

    (b) Nitrogen

    (c) Silicon

    (d) Phosphorous.

(7) One mole of oxygen is equal to

    (a) One gram of oxygen

    (b) 16grams of Oxygen

    (c) 32 grams of Oxygen

    (d) 6 grams of Oxygen

(8) The conjugate base of HCO_3^- is

    (a) CO_3^{-2}

    (b) HCO_3^{-1}

    (c) CO_3^{-1}

    (d) HCO^{-2}

(9) The pH of 0.1 M KOH is -------

    (a) 1

    (b) 13

    (c) 14

    (d) None of the above

(10) Which one of the following statements is true?

    (a) The properties of the elements are the periodic functions of atomic numbers.

    (b) The properties of the elements are the periodic functions of atomic masses.

    (c) There are 18 elements in the 2nd period.

    (d) The group 1 elements are highly electronegative

(11) Name the type of reaction for the equation given below.

Fe+ $CuSO_4$ ----$FeSO_4$ + Cu
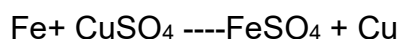
(a)Combination reaction

(b)Displacement reaction

(c)Decomposition reaction

(d)All of the above

Fill in the blanks by choosing the correct answers (Q12 to 21)

(12) Polar bonds are formed between two atoms having different ----------- (Electro negativities or Electron affinity)

(13) The volume occupied by one mole of any gas at STP is equal to ------Litres.(22.4 litres or 24 liters.)

(14) Formula for Calcium oxide is ----- (CaO or CaO_2)

(15) Di nitrogen tetroxide ---NO_2 or N_2O_4

(16) Compounds formed by transfer of electrons are called as ------Compounds.(Ionic or Covalent compounds)

(17) Ionic compounds are good conductors of electricity----True or False

(18) The oxygen atom has ------number of valence electrons (Six or eight)

(19) The solution which is more acidic is ------- (The one with pH 2 or pH 6)

(20) Empirical formula for the compound with molecular formula $C_6H_{12}O_6$ is ----- (CH_2O or $C_{12}H_{22}O_{12}$)

(21) The intermolecular force found in water is ---- (H-bonding or Covalent bonding)

(22) Sam wants to make sandwiches, each with two slices of bread and a cheese slice. He has 6 slices of bread and one cheese slice.

(a) How many Sandwiches can Sam make?

(b) Based on your above answer which is in excess---Bread or cheese slices.

(c) Which one of the ingredients is limiting Sam for making more sandwiches----Bread or cheese slices?

(23) What is the percentage composition of carbon and hydrogen in CH_4?

(24) Name the following compounds

(a) H_2SO_4

(b) PCl_5

(c) $NaCl$

(25) **Balance the following equations**

(a) $N_2 + H_2 \longrightarrow NH_3$

(b) $CaCO_3 \longrightarrow CaO + CO_2$

(c) $Na + 2H_2O \longrightarrow NaOH + H_2$

Answers:--

Multiple Choices:-

(1) c	(2) b	(3) a	(4) a	(5) d
(6) a	(7) c	(8) a	(9) b	(10) a
(11) b				

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Fill in the blanks by choosing the correct answers

(12) Electronegativity	(13) 22.4 litres	(14) CaO	(15) N_2O_4	(16) Ionic compounds
(17)True	(18) 6	(19) pH 2	(20) CH_2O	(21) H-bonding

(22) (a) 1 Sandwich (b) Excess—Bread slices (c) Limiting ingredient---Cheese slices

(23) Carbon = 75%   Hydrogen= 25%

(24) (a) H_2SO_4 ---Sulphuric acid

(b)PCl_5 ----Phosphorous penta chloride

(c)NaCl ---Sodium Chloride

Balanced equations:-

(25)(a)$N_2 + 3H_2 \longrightarrow 2NH_3$

(b)$CaCO_3 \longrightarrow CaO + CO_2$

(c) $2Na + 2H_2O \longrightarrow 2NaOH + H_2$