Basic Concepts of Chemistry and Chemical Calculations 2

11th Standard

Chemistry

Exam Time : 00:50:00 Hrs   Total Marks : 50

50 x 1 = 50

1) What will be the basicity of H_3BO_3, which is not a protic acid?
   (a) One   (b) Two   (c) Three   (d) Four

2) In the reaction to $NH_3 + H_2O \longrightarrow NH_4^+ + O\overline{H}$, NH_3 is acidic in. the reason for its acidic is_____
   (a) Acceptance of one H^+ from water   (b) A release of one OH^-ion   (c) Due to the nitrogen atom   (d) All the above

3) Calculate the percentage of N in ammonia molecule.
   (a) 121.42%   (b) 28.35%   (c) 82.35%   (d) 28.53%

4) If a beaker holds 576g of water, what will be the gram molecules of water in that beaker?
   (a) 23 gram molecule   (b) 23%   (c) 32%   (d) 32 gram molecule

5) Assertion: The atomic masses of most of the elements. are in the fraction.
   Reason: The atomic mass represents the ratio of the average mass of the atom to one avogram.
   (a) Both assertion and reason are correct and the reason is the correct explanation for assertion   (b) Both assertion and reason are correct but the reason is not the correct explanation for an assertion   (c) Assertion is true but reason are false   (d) Both assertion and reason are false

6) Assertion: The number of oxygen atoms in 16g of oxygen and 16g of ozone is same
   Reason Each of the species represent 1g atom of oxygen
   (a) Both assertion and reason are correct and the reason is the correct explanation for an assertion   (b) Both assertion and reason are correct but a reason is not the correct explanation for assertion   (c) Assertion is true but reason are false.   (d) Both assertion and reason are false

7) Assertion: The ash produced by burning paper in air is lighter than the original mass of paper.
   Reason: he residue left after combustion of a chemical entity is always lighter
   (a) Both assertion and reason are correct and reason is the correct explanation for assertion.   (b) Both assertion and reason are correct but reason is not the correct explanation for assertion   (c) Assertion is true but reason are false   (d) Both assertion and reason are false

8) Assertion: Oxalic acid is a dibasic acid
   Reason: It contains two basic radicals
   (a) Both assertion and reason are correct and reason is the correct explanation for assertion.   (b) Both assertion and reason are correct but reason is not the correct explanation for assertion   (c) Assertion is true but reason are false   (d) Both assertion and reason are false

9) How many moles of magnesium phosphate $Mg_3(PO_4)_2$ Will Contain 0.25 moles of oxygen atoms?

(a) 0.02   (b) 3.125×10^{-2} (c) 1.25×10^{-2} (d) 2.5×10^{-2}

10) Assertion: Equal volumes of all the gases do not contain equal number of atoms
Reason: Atom is the smallest particle which takes part in chemical reactions.

(a) Both assertion and reason are correct and reason is the correct explantion for assertion

(b) Both assertion and reason are correct but reason is not the correct explantion for assertion

(c) Assertion is true but reason are false

(d) Both assertion and reason are false

11) A compound has an empirical formula C_2H_4O. If the value of n = 2 the molecular formula of the compound is_____

(a) C_2H_4O (b) CH_2O (c) CH_2 (d) $C_4H_8O_2$

12) Equal volume of N_2 and H_2 react to form ammonia under suitable condition then the limiting reagent is

(a) H_2 (b) N_2 (c) NH_3 (d) No Reactant is a limiting regent

13) What is the ratio of empirical formula mass to molecular formula mass of benzene?

(a) 1:6   (b) 6:1   (c) 2:3   (d) 3:2

14) Assertion: When 4 moles of H_2 reacts with 2 moles of O_2 then 4 moles of water is formed.
Reason: O_2 will act as limiting reagent.

(a) Both assertion and reason are true and reason is the correct explanation of assertion

(b) Both assertion and reason are true but reason is not the correct explanation of assertion.

(c) Only assertion is true but reason is false

(d) Both assertion and reason are false.

15) Which one of the following is the standard for atomic mass?

(a) $_1H^1$ (b) $_6C^{12}$ (c) $_6C^{14}$ (d) $_8O^{16}$

16) One mole of CO_2 contains:

(a) 6.023×10^{23} atoms of C

(b) $6.0^{23} \times 10^{23}$ atoms of O

(c) 18.1×10^{23} molecules of CO_2

(d) 3g atoms of CO_2

17) Two containers A and B of the equal volume contain 6g of each O_2 and SO_2 at 300K and 1atm. Then:

(a) No. of molecules in A is less than that in B

(b) No.of molecules inA is more than that inB

(c) No. of molecules in A and B are same

(d) none of these

18) The number of molecules in 16g of methane is:

(a) 3.023×10^{23} (b) 6.023×10^{23} (c) $16/6.023 \times 10^{23}$ (d) $6.023/3 \times 10^{23}$

19) No. of atoms in 4.25g of ammonia is:

(a) 1×10^{23} (b) 2×10^{23} (c) 4×10^{23} (d) 6×10^{23}

20) The mass of one molecule of HI in grams is:

(a) 2.125×10^{-22} (b) 128   (c) 127   (d) 6.02×10^{-23}

21) Avogadro's number is the number of molecules present in:

(a) 1g of molecule

(b) I g atom of molecule

(c) gram molecular mass

(d) 1lit of molecule

22) Equivalent mass of $KMnO_4$ in acidic medium, concentrated alkaline medium and dilute basic medium respectively are $\frac{M}{5}$, M, M. Reduced products can be:

(a) MnO_2, MnO_4^{2-}, $Mn2+$

(b) MnO_2, $Mn2+$, MnO_4^{2-}

(c) $Mn2+$, MnO_2, MnO_4^{2-}

(d) $Mn2+$, MnO_4^{2-}, MnO_2

23) What is the mass of the precipitate formed when 50 mL of 16.9% solution of $AgNO_3$ is mixed with 50 mL of 5.8%NaCl solution?
   (a) 7g   (b) 14g   (c) 28g   (d) 35

24) 5.6 L of a gas at STP are found to have mass of 11g. The molecular mass ofthe gas is:
   (a) 36   (b) 48   (c) 40   (d) 44

25) Which of the following is a mono-atomic molecule?
   (a) Hydrogen   (b) Oxygen   (c) Sodium   (d) Ozone

26) The value of Avogadro Number N is equal to
   (a) $2.24 \times 10^{-2}L$ (b) $22400 \ cm^{-3}$ (c) 6.023×10^{-23} (d) 6.023×10^{23}

27) 22 g of CO_2 contains _____ molecules of CO_2.
   (a) 6.023×10^{-23} (b) 6.023×10^{23} (c) 3.0115×10^{23} (d) 3.0115×10^{-23}

28) The number of moles of ethane in 60 g is _____.
   (a) 2   (b) 4   (c) 0.5   (d) 1

29) Which of the following method is used to prevent rusting of iron?
   (a) Galvanisation   (b) Painting   (c) Chrome plating   (d) all the above

30) How many H_2O molecules are there in a snowflake weighing 1 mg?
   (a) 3.35×10^{19} (b) 6.023×10^{23} (c) 3.35×10^{-19} (d) 100

31) The equivalent mass of NaCl is _____.
   (a) 40   (b) 58.5   (c) 35.5   (d) 23

32) How many molecules of hydrogen is required to produce 4 moles of ammonia?
   (a) 15 moles   (b) 20 moles   (c) 6 moles   (d) 4 moles

33) The number of moles of oxygen required to prepare 1 mole of water is

   _____.
   (a) 1 moles   (b) 0.5 moles   (c) 2 moles   (d) 0.4 moles

34) How much volume of CO_2 is produced when 50 g of $CaCO_3$ is heated strongly?
   (a) $2.24 \times 10^{-2}m^3$ (b) 22.4 L   (c) 11.2L   (d) $22400 \ Cm^3$

35) In the reaction $2AuCl_3 + 3SnCl_2 \rightarrow 2Au + 3SnCl_4$ which is an oxidising agent?
   (a) $AuCl_3$ (b) Au   (c) $SnCl_2$ (d) Both $AuCl_3$ and $SnCl_2$

36) The oxidation state of a substance in its elementary state is equal to _____.
   (a) -1   (b) -2   (c) Zero   (d) Charge of the ion

37) The oxidation number of Cr in $K_2Cr_2O_7$ is _____.
   (a) +4   (b) +6   (c) 0   (d) +7

38) $Zn(s) + Cu^{2+}_{(aq)} \rightarrow Zn^{2+}_{(aq)} + Cu_{(s)}$ In this reaction, which gets oxidised?
   (a) Cu^{2+} (b) Zn^{2+} (c) Zn   (d) Zn, Cu^{2+}

39) Which one ofthe following is an example for disproportionation reaction?
   (a) $CuSO_4 + Zn \rightarrow$ (b) $2KClO_3 \rightarrow 2KCl$ (c) PCl_5 (d) $4H_3PO_3$
   $ZnSO_4 +Cu$ $+ 3O_2$ $\rightarrow PCl_3 +Cl_2$ $\rightarrow 3H_3PO_4 + PH_3$

40) The number of moles of H, in 2.24 litre of hydrogen gas at STP is _____
   (a) 1   (b) 0.1   (c) 0.01   (d) 0.001

41) How many molecules are present in 32 g of methane?
   (a) $2 \times 6.023 \times 10^{23}$ (b) $6.023 \times 10^{23}/2$ (c) 6.023×10^{-23} (d) 3.011×10^{23}

42) How many moles of water is present in IL of water?
   (a) 1   (b) 18   (c) 55.55   (d) 5.555

43) The molar mass of Na_2SO_4 is.....
   (a) 129   (b) 142   (c) 110   (d) 70

44) 5.6 litres of oxygen at STP is equivalent to_____
   (a) 1 mole   (b) 1/4 mole   (c) 1/8 mole   (d) 1/2 mole

45) 12 g of Mg will react completely with an acid to give _____.
   (a) 1 Mole of O_2 (b) 1/2 mole of H_2 (c) 1 mole of H_2 (d) 2 mole of H_2

46) Which of the following halogens do not exhibit positive oxidation number in its compounds?
   (a) Fluorine   (b) Chlorine   (c) Iodine   (d) Bromine

47) On the reaction $2Ag + H_2SO_4 \rightarrow Ag^2SO4 + 2H_2O + SO_2$.Sulphuric acid acts as _____.
   (a) oxidising agent (b) reducing agent (c) a catalyst (d) an acid as well as an oxidant

48) The oxidation number of carboxylic carbon atom in CH_3COOH is _____.
   (a) +2   (b) +4   (c) +1   (d) +3

49) When methane is burnt in oxygen to produce CO_2 and H_2O, the oxidation number of carbon changes by _____.
   (a) -8   (b) +4   (c) Zero   (d) +8

50) The oxidation number of carbon is zero in _____.
   (a) HCHO   (b) $C_{12}H_{22}O_{11}$ (c) $C_6H_{12}O_6$ (d) All the above

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