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2021 11 midterm1 chemistry

CBSE

Sem: XI

Date:

Time:25 mins

Subject: CHE- CHEMISTRY

Mark(s): 25

Q.No	Question	
1	**The number of atoms present in 0.1 moles of a triatomic gas is** (a) 1.806×10^{23} (b) 1.806×10^{22} (c) 3.600×10^{23} (d) 6.026×10^{22} 1: a 2: b 3: c 4: d	[1]
2	**Which one will have maximum numbers of water molecules? (Atomic weight of H,O are 1 and 16g)** (a) 18 molecules of water (b) 1.8 grams of water (c) 18 grams of water (d) 18 moles of water 1: a 2: b 3: c 4: d	[1]
3	What will be the molarity of a solution, which contains 5.85 g of NaCl(s) per 500 mL? (atomic weight of Na,Cl are 23 and 35.5g) (a) 4 mol/L (b) 20 mol/L (c) 0.2 mol/L (d) 2 mol/L (At.mass of Na=23g ,Cl=35.5g) 1: a 2: b 3: c 4: d	[1]
4	How many gram of solute is required to prepare 1.0 L of 1 M $CaCl_2.6H_2O$?(Mol.mass of $CaCl_2$=111g and H_2O=18g) (a) 200 g (b) 216 g (c) 219 g (d) None of the above 1: 2: 3: c 4:	[1]

Q.No	Question	
5	Which of the following pairs have the same number of atoms?(Mol.mass of O_2,N_2,CO_2, H_2 are 32,28,44,2g respectively (a) 16 g of $O2$(g) and 4 g of $H2$(g) (b) 16 g of O_2(g)and 44 g ofCO_2 (c) 28 g of N_2(g) and 32 g of O_2 (d) 28g of N(g) and 32 g of O2(g) 1: a 2: b 3: c 4: d	[1]
6	**Rearrange the following (I to IV) in the order of increasing masses :** **(I) 0.5 mole of O_3** **(II) 0.5 gm of oxygen** **(III) 3.011x 10^{23} molecules of O_2** **(IV) 5.6 litre of CO_2 at STP** (a) II < IV < III < I (b) II < I < IV <III (c) IV < II < III < I (d) I < II < III < IV 1: a 2: b 3: c 4: d	[1]
7	How many molecules of $H_2SO_4$are present in 0.2M solution of it in 250ml? (a)0.3x10^{23} (b)0.3x10^{22} (c0.3x10^{21} (d) 3x10^{23} 1: a 2: b 3: c 4: d	[1]
8	Calculate the mass percentage of benzene (C_6H_6) and CCl_4(carbon tetrachloride) if 22g of benzene is dissolved in 122g of CCl4.(At.mass of C and Cl are 12,35.5g) (a) 84.73,15.27 (b) 15.27,84.73 (c) 11.84,88.16 (d) 88.16,11.84 1: a 2: b 3: c 4: d	[1]
9	Hydrogen gas is prepared in the lab by reacting dilute HCl with granulated zinc $Zn+HCl \rightarrow ZnCl_2+H2$ (At.mass of Zinc=65g) Calculate the mass of of HCl that reacts with 34g of zinc (a) 0.037g (b) 0.37g (c) 3.71g (d)38.1g 1: a 2: b 3: c 4: d	[1]
10	**5.2 molal aqueous solution of methyl alcohol, CH_3OH is supplied. What is the mole fraction of methyl alcohol in the solution?** (a) 0.050 (b) 1.100 (c) 0.190 (d) 0.086 1: a 2: b 3: c 4: d	[1]

Q.No	Question	
11	If 4g of NaOH dissolves in 36g of H2O, calculate the mole fraction of NaOH Component. (a) 4.7 (b) 0.0047 (c) 0.47 (d) 0.048 1: a 2: b 3: c 4: d	[1]
12	Chlorophyll contains 2.68% of Mg by weight. Calculate the number of Mg Atoms in 2g of chlorophyll (a) $1.3x10^{21}$ (b) $1.3x10^{23}$ (c) $1.3x10^{22}$ (d)$1.3x10^{20}$ 1: a 2: b 3: c 4: d	[1]
13	3g of H2 reacts with 29g of O2 $2H_2+O_2 \rightarrow 2H_2O$ (i) Find the limiting reagent (ii) what is the maximum amount of H2O produced? (a) H_2,27g (b) O_2,26.8g (c) H_2, 26.8g 1: a 2: b 3: c 4: d	[1]
14	20g of CaCO3 is treated with 20g of HCl. How many grams of CO2 will be Produced? $CaCO_3+2HCl \rightarrow CaCl_2+CO_2+H_2O$ (mol.mass of $CaCO_3$,HCl,$CaCl_2$ are 100,36.5,111g respectively) a. 88g b.0.88g c.8.8g d. 0.008g 1: a 2: b 3: c 4: d	[1]
15	$Ca(OH)_2+2NH_4Cl \rightarrow CaCl_2+2NH_3+2H_2O$ What mass of calcium hydroxide is required to decompose 4g of NH4Cl? (mol.mass of $Ca(OH)_2$, NH_4Cl,$CaCl_2$,NH_3=74,53.5,111,34g respectively a.27.66g b.2.766g c.0.276g d.0.0027g 1: a 2: b 3: c 4: d	[1]
16	Conc.HCl contains 38% HCl by mass. Calculate the molarity of this solution if the density Of this solution is 1.19g/cm^3 (mol.mass of HCl=36.5g) a. 0.1238 b. 123.8 c1.238 d.12.38 1: a 2: b 3: c 4: d	[1]
17	How many molecules of oxalic acid are present in 0.01M solution of it in 25ml? a. $1.5x10^{20}$ b.$3x10^{23}$ c. $3x10^{21}$ d.$30.1x10^{22}$ 1: a 2: b 3: c 4: d	[1]
18	The density of 3M solution of NaCl is 1.25g/ml. What is the molality of the solution (a) 2.79 (b) 27.9 (c) 0.279 (d) 0.027 1: a 2: b 3: c 4: d	[1]

Q.No	Question				
19	**The density (in g mL^{-1}) of a 3.60 M sulphuric acid solution that is 29% H_2SO_4 (Molar mass = 98 g mol^{-1}) by mass will be:** a) 1.45 b) 1.64 c) 1.88 d) 1.22 1: a	2: b	3: c	4: d	[1]
20	Percentage of Carbon in CO_2 is (a) 30 (b) 40 (c) 27 (d) 50 1: a	2: b	3: c	4: d	[1]
21	Empirical formula of glucose (a) CH_3O (b) CH_2O (c) CHO (d) CHO_2 1: a	2: b	3: c	4: d	[1]
22	How much of copper is obtained from 318g of copper sulphate.(Atomic mass of Cu=63g) (a) 63g (b) 31.5g (c) 6.3g (d) 1.26g 1: a	2: b	3: c	4: d	[1]
23	Find the amount of CO_2 that could be produced when 1 mole of carbon is burnt in 16g of O_2 (a) 44g (b) 22g (c) 4.4g (d) 2.2g 1: a	2: b	3: c	4: d	[1]
24	Number of moles of carbon in 6 moles of butane (a) 6 (b) 12 (c) 32 (d) 24 1: a	2: b	3: c	4: d	[1]
25	A+ 2B → 2C If 100 atoms of A reacts with 50 atoms of B find the limiting reagent. (a) A (b) B (c) A and B (d) no limiting reagent 1: a	2: b	3: c	4: d	[1]