



# SPEED

## Practice Sheet NEET Chemistry

### SOME BASIC CONCEPTS OF CHEMISTRY

- What mass of magnesium (atomic mass = 24) will have the same number of atoms as are present in 9 gm aluminum (atomic mass = 27)?  
(a) 8 gm                      (b) 9 gm                      (c) 12 gm                      (d) 72 gm
- If the mass of proton is doubled and that of neutron is halved, the molecular weight of  $\text{CO}_2$  consisting of only  $\text{C}^{12}$  and  $\text{O}^{16}$  atoms, will:  
(a) not change                      (b) increase by 25%  
(c) decrease by 25%                      (d) increase by 50%
- Dopamine is a neurotransmitter, a molecule that serves to transmit message in the brain. The chemical formula of dopamine is  $\text{C}_8\text{H}_{11}\text{O}_2\text{N}$ . How many moles are there in 1 g of dopamine?  
(a) 0.00654                      (b) 153                      (c) 0.0654                      (d) None of these
- A compound contains equal masses of the elements A, B and C. If the atomic masses of A, B and C are 20, 40 and 60, respectively, the empirical formula of the compound is :  
(a)  $\text{A}_3\text{B}_2\text{C}$                       (b)  $\text{AB}_2\text{C}_3$                       (c) ABC                      (d)  $\text{A}_6\text{B}_3\text{C}_2$
- Calculate the number of neutrons present in  $12 \times 10^{25}$  atoms of oxygen ( ${}^{17}_8\text{O}$ ):  
(a) 1800                      (b) 1600                      (c)  $1800 N_A$                       (d)  $3200 N_A$
- $\text{SO}_2\text{Cl}_2$ , sulphuryl chloride reacts with water to give a mixture of  $\text{H}_2\text{SO}_4$  & HCl. What volume of 0.2 M  $\text{Ba}(\text{OH})_2$  is needed to completely neutralize 50 ml of 0.2 M  $\text{SO}_2\text{Cl}_2$  solution?  
(a) 100 ml                      (b) 200 ml                      (c) 300 ml                      (d) 400 ml
- An aqueous solution is made by dissolving glucose ( $\text{C}_6\text{H}_{12}\text{O}_6$ ) and urea ( $\text{NH}_2\text{CONH}_2$ ) in water. The mole ratio of glucose and water is 1:10. If the masses of glucose and urea are in 3:1 ratio, the mole fraction of glucose in the solution is :  
(a)  $\frac{1}{11}$                       (b)  $\frac{1}{12}$                       (c)  $\frac{1}{10}$                       (d)  $\frac{3}{4}$
- 10 ml of a compound containing 'N' and 'O' is mixed with 30 ml of  $\text{H}_2$  to produce  $\text{H}_2\text{O}$  (l) and 10 ml of  $\text{N}_2$  (g). Molecular formula of compound if both reactants reacts completely, is  
(a)  $\text{N}_2\text{O}$                       (b)  $\text{NO}_2$                       (c)  $\text{N}_2\text{O}_3$                       (d)  $\text{N}_2\text{O}_5$
- The pair of species having same percentage (mass) of carbon is:  
(a)  $\text{CH}_3\text{COOH}$  and  $\text{C}_6\text{H}_{12}\text{O}_6$                       (b)  $\text{CH}_3\text{COOH}$  and  $\text{C}_2\text{H}_5\text{OH}$   
(c)  $\text{HCOOCH}_3$  and  $\text{C}_{12}\text{H}_{22}\text{O}_{11}$                       (d)  $\text{C}_6\text{H}_{12}\text{O}_6$  and  $\text{C}_{12}\text{H}_{22}\text{O}_{11}$
- A compound is composed of 74% C, 8.7% H and 17.3% N by mass. If the molecular mass of the compound is 162, what is its molecular formula ?  
(a)  $\text{C}_5\text{H}_7\text{N}$                       (b)  $\text{C}_{10}\text{H}_{16}\text{N}_2$                       (c)  $\text{C}_8\text{H}_{14}\text{N}_3$                       (d)  $\text{C}_{10}\text{H}_{14}\text{N}_2$

11. An iodized salt contains 0.5 % of NaI. A person consumes 3 gm of salt everyday. The number of iodide ions going into his body everyday is  
 (a)  $10^{-4}$  (b)  $6.02 \times 10^{-4}$  (c)  $6.02 \times 10^{19}$  (d)  $6.02 \times 10^{23}$
12. The sterile saline solution used to rinse contact lenses can be made by dissolving 400 mg of NaCl in sterile water and diluting to 100 mL. The molarity of the solution will be  
 (a) 0.00684 M (b) 0.09564 M (c) 1.0684 M (d) 0.0684 M
13. 20 g of solute X are dissolved in 50 g of water. 15 g of solute Y are dissolved in 70 g of benzene. The molalities of the solutes in these two solutions are the same. Hence, the ratio of the molecular weights of solute X to that of the solute Y is  
 (a) 7:5 (b) 4:3 (c) 15:28 (d) 28:15
14. Methyl-t-butyl ether,  $C_5H_{12}O$ , is added to gasoline to promote cleaner burning. How many moles of oxygen gas,  $O_2$  are required to burn 1.0 mol of this compound completely to form carbon dioxide and water?  
 (a) 4.5 mol (b) 6.0 mol (c) 7.5 mol (d) 8.0 mol
15. The hydrated salt  $Na_2SO_4 \cdot nH_2O$  loses all water of crystallization on heating and is reduced to 44.1% of its original weight. Therefore, the value of n is  
 (a) 5 (b) 10 (c) 6 (d) 7
16. Number of moles of  $NH_3$  produced if 140 gm of  $N_2$  reacts with 40 gm of hydrogen is \_\_\_\_\_  
 [Given % yield of reaction is 50%]  
 (a) 12 (b) 10 (c) 5 (d) 6
17. Maximum number of moles of barium phosphate formed when 0.9 mole of barium chloride is mixed with 0.4 mole of sodium phosphate is  
 (a) 0.2 (b) 0.4 (c) 0.9 (d) 1.3
18. Aluminum carbide ( $Al_4C_3$ ) liberates methane on treatment with water. The grams of aluminum carbide required to produce 11.2 L of methane under STP conditions is : [Given : Al = 27]  
 (a) 48 (b) 72 (c) 144 (d) 24
19. Volume of water which must be added to 500 ml 8M HCl to make 2 lit. of 7.3 % w/v HCl solution is  
 (a) 1.5 lit. (b) 0.5 lit. (c) 1 lit. (d) 2 lit.

### STATEMENT BASED QUESTIONS

20. **Statement -1** : For a very dilute solution molality & molarity are always approximately equal  
**Statement -2** : Mass of solution is always approximately equal to mass of solvent for a very dilute solution.  
 (a) Statement-1 is true, statement-2 is true and statement-2 is correct explanation for statement-1.  
 (b) Statement-1 is true, statement-2 is true and statement-2 is NOT the correct explanation for statement-1.  
 (c) Statement-1 is false, statement-2 is true.  
 (d) Statement-1 is true, statement-2 is false.
21. **Statement -1** : The total number of neutrons in 10 gm  $ND_3$  (D is  ${}^2_1H$ ) are  $5N_A$ .  
**Statement -2** : One molecule of  $ND_3$  has 10 neutrons.  
 (a) Statement-1 is true, statement-2 is true and statement-2 is correct explanation for statement-1.  
 (b) Statement-1 is true, statement-2 is true and statement-2 is NOT the correct explanation for statement-1.  
 (c) Statement-1 is false, statement-2 is true.  
 (d) Statement-1 is true, statement-2 is false.

22. **Statement -1** : Molarity of pure water if its density is 0.90 gm/ml at 90°C is 50 M.  
**Statement -2** : Molarity of pure liquids and solids are given by molar mass divided by density.  
 (a) Statement-1 is true, statement-2 is true and statement-2 is correct explanation for statement-1.  
 (b) Statement-1 is true, statement-2 is true and statement-2 is NOT the correct explanation for statement-1.  
 (c) Statement-1 is false, statement-2 is true.  
 (d) Statement-1 is true, statement-2 is false.
23. **Statement -1** : When 1 mole of  $\text{NH}_3$  and 1 mole of  $\text{O}_2$  are made to react, then all the  $\text{NH}_3$  may be consumed.  
 If (unbalanced) reaction is  $\text{NH}_3(\text{g}) + \text{O}_2(\text{g}) \longrightarrow \text{NO}(\text{g}) + \text{H}_2\text{O}(\text{l})$   
**Statement -2** : Oxygen is limiting reagent as per given data.  
 (a) Statement-1 is true, statement-2 is true and statement-2 is correct explanation for statement-1.  
 (b) Statement-1 is true, statement-2 is true and statement-2 is NOT the correct explanation for statement-1.  
 (c) Statement-1 is false, statement-2 is true.  
 (d) Statement-1 is true, statement-2 is false.
24. **Statement -1** : Density of dry air (containing  $\text{N}_2$  and  $\text{O}_2$  gas) is greater than that of sample of moist air (containing  $\text{N}_2$ ,  $\text{O}_2$  &  $\text{H}_2\text{O}$  gas) at same T and P.  
**Statement -2** : Molecular mass of  $\text{H}_2\text{O}$  gas is lesser than  $\text{N}_2$  &  $\text{O}_2$  both.  
 (a) Statement-1 is true, statement-2 is true and statement-2 is correct explanation for statement-1.  
 (b) Statement-1 is true, statement-2 is true and statement-2 is NOT the correct explanation for statement-1.  
 (c) Statement-1 is true, statement-2 is false.  
 (d) Statement-1 is false, statement-2 is true.
25. **Statement -1** : The mass of  $\text{Mg}_3\text{N}_2$  produced as per the reaction  $\text{Mg} + \text{NH}_3 \longrightarrow \text{Mg}_3\text{N}_2 + \text{H}_2$  if 48 gm of Mg metal is reacted with 34 gm  $\text{NH}_3$  gas is  $\frac{200}{3}$  g.  
**Statement -2** : As per the given data,  $\text{N}_2$  is the limiting reagent.  
 (a) Statement-1 is true, statement-2 is true and statement-2 is correct explanation for statement-1.  
 (b) Statement-1 is true, statement-2 is true and statement-2 is NOT the correct explanation for statement-1.  
 (c) Statement-1 is true, statement-2 is false.  
 (d) Statement-1 is false, statement-2 is true.

## Answer Key

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|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1. (a)  | 2. (b)  | 3. (a)  | 4. (d)  | 5. (c)  | 6. (a)  | 7. (b)  | 8. (c)  | 9. (a)  | 10. (d) |
| 11. (c) | 12. (d) | 13. (d) | 14. (c) | 15. (b) | 16. (c) | 17. (a) | 18. (d) | 19. (a) | 20. (c) |
| 21. (a) | 22. (d) | 23. (c) | 24. (a) | 25. (c) |         |         |         |         |         |

