



CHEMISTRY

BOOKS - DISHA CHEMISTRY (HINGLISH)

BASIC CONCEPTS OF CHEMISTRY

Mcq

1. Give the numbers, 161 cm, 0.161 cm, 0.016 cm. The number of significant figure for the three numbers are

A. 3,4 and 5 respectively

B. 3,3 and 4 respectively

C. 3,3 and 3 respectively

D. 3,4 and 4 respectively

Answer: C



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2. If the true value for an experimental result is 6.23 and the results reported by three students X, Y and Z are, X: 6.18 and 6.28 Y: 6.20 and 6.023 Z: 9.22 and 6.24

Which of the following options is correct:

- A. X precise, Y accurate, Z precise and accurate
- B. X precise and accurate, Y not precise, Z precise
- C. Both X & Z precise and accurate, Y not precise.
- D. Both X and Y neither precise nor accurate, Z both precise and accurate.

Answer: D



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3. Number of grams of oxygen in $32.2g Na_2SO_4 \cdot 10H_2O$ is

A. 20.8

B. 2.24

C. 22.4

D. 2.08

Answer: C



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4. 3g of an oxide of a metal is converted to chloric completely and it yielded 5 g of chloride. The equivalent weight of the metal is

A. 3.325

B. 33.25

C. 12

D. 20

Answer: B



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5.1. N_2O at NTP contains:

A. $\frac{1.8}{224} \times 10^{22}$ atoms

B. $\frac{6.02}{22400} \times 10^{23}$ molecules

C. $\frac{1.32}{224} \times 10^{23}$ electrons

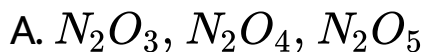
D. All of the above

Answer: D



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6. One of the following combination which illustrate the law of reciprocal proportions?



D. pH_3 , P_2O_3 , P_2O_5

Answer: C



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7. All aqueous solution of oxalic dihydrate contains its 6.3g in 250 ml. The volume of 0.1 N NaOH required to completely neutralize 10mL of this solution

A. 4mL

B. 20mL

C. 2mL

D. 40mL

Answer: D



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8. The density of 3M solution of sodium chloride is 1.252 gmL^{-1} . The molality of the solution will be: (molar mass, $\text{NaCl} = 58.5 \text{ gmol}^{-1}$).

A. 260 m

B. 2.18 m

C. 2.79 m

D. 3.00 m

Answer: C



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9. The number of atoms in 0.1 mole of triatomic gas is: ($N_A = 6.02 \times 10^{23} \text{ mol}^{-1}$).

A. 6.026×10^{22}

B. 1.806×10^{23}

C. 3.600×10^{23}

D. 1.800×10^{22}

Answer: B



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10. The simplest formula of a compound containing 50% of element X(atomic mass 10) and 50% of element Y (atomic mass 20) is



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11. Which one of the following is the lightest?

A. 0.2 mole of hydrogen gas

B. 6.023×10^{22} molecules of nitrogen

C. 0.1 g of silver

D. 0.1 mole of oxygen gas

Answer: C



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12. If N_A is Avogadro's number then number of valence electrons in 4.2 g of nitride ions (N^{3-} is

A. $4.2N_A$

B. $2.4N_A$

C. $1.6N_A$

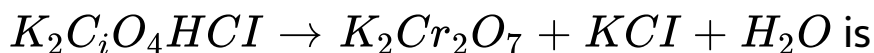
D. $3.2N_A$

Answer: B



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13. The set of numerical coefficients that balances the _____ equation



A. 2,2,1,2,1

B. 2,2,1,1,1

C. 2,1,1,2,1

D. 1,1,2,2,1

Answer: A



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14. Match the column 

A. A-III, B-II, C-V, D-I, E-IV

B. A-V, B-I, C-IV, D-III, E-II

C. A-I, B-V, C-IV, D-III, E-II

D. A-V, D-IV, C-III, D-II, E-I

Answer: B



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15. The maximum number of molecules are present in

A. $15\text{L of } H_2 \text{ gas at STP}$

B. $5\text{L of } N_2 \text{ gas at STP}$

C. $0.5\text{g of } H_2 \text{ gas}$

D. $10\text{g of } O_2 \text{ gas}$

Answer: A



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16. The number of moles of oxygen in one liter of air containing 21% oxygen by volume, under standard conditions are

A. 0.0093 mole

B. 0.21 mole

C. 2.10 mole

D. 0.186 mole

Answer: A



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17. Assuming fully decomposed, the volume of CO_2 released at STP on heating 9.85 g of $BaCO_3$ (Atomic mass, B a=137) will be

A. 112 L

B. 2.24 L

C. 4.06 L

D. 0.84 L

Answer: A



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18. The ratio of the molar amounts of H_2S needed to precipitate the metal ions from 20 mL each of $1M Ca(NO_3)_2$ and $0.5M CuSO_4$ is

A. 1:1

B. 2:1

C. 1:2

D. indefinite

Answer: B



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19. Consider the following statement. (i) Atoms of H, O, N and C have identical properties but different mass. (ii) Matter is divisible into atoms which are further indivisible. (iii) The ratio of $N:H$ in NH_3 and $N:O$ in nitric oxide is 2:1. (iv) Dalton's atomic theory supports law of conservation of mass. Which of the following pairs of statements is true according to Dalton's atomic theory?

A. (i) and (ii)

B. (ii) and (iii)

C. (ii) and (iv)

D. (i) and (iv)

Answer: C



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20. How many moles of $Al_2(SO_4)_3$ would be in 50 g of the substance?

A. 0.083 mole

B. 0.952 moles

C. 0.481 mole

D. 0.140 mole

Answer: D



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21. Experimentally it was found that a metal oxide has formula $M_{0.98}O$. Metal M, present as M^{2+} and M^{3+} in its oxide. Fraction of the metal which exist as M^{3+} and M^{3+} in its oxide. Fraction of the metal which exists as M^{3+} would be:

A. 0.0701

B. 0.0408

C. 0.0605

D. 0.0508

Answer: B



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22. 20.0 g of magnisium carbonate sample decoposes on heating to give carbon dioxide and 8.0 g magnesium oxide. What will be the prcentage purity of magnesium carbonate in the sample?

A. 75

B. 96

C. 60

D. 84

Answer: D



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23. A sample of AlF_3 contains $3.0 \times 10^{24} F^-$ ions.

The number of formula unit of this sample are`

A. 9×10^{24}

B. 3×10^{24}

C. 0.75×10^{24}

D. 1.0×10^{24}

Answer: D



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24. Read the following and choose the incorrect statements. (i) Both weight and mass are same quantities used for measurement of amount of matter present in a substance. (ii) Mass and the weight of a substance vary from one place to another due to change in gravity. (iii) SI unit of mass is kilogram and which SI unit of weight is gram.

A. (i) and (iii)

B. (ii) and (iii)

C. (i) and (ii)

D. All of the above

Answer: D



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25. Number of atoms in 558.5 gram of

Fe (*at. wt. of $Fe = 55.85 \text{ gmol}^{-1}$*) is

A. twice that in 60 g carbon

B. 6.023×10^{22}

C. half that in 8 g He

D. $558.5 \times 6.023 \times 10^{23}$

Answer: A



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26. What is the mass of precipitate formed when 50mL of 16.9% solution of $AgNO_3$ is mixed with 50 mL of 5.8% NaCl solution?

($9Ag=107.8, N=14, O=16, Na=23, Cl=35.5$)`

A. 28g

B. 3.5 g

C. 7 g

D. 14 g

Answer: C



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27. Which of the following option represents correct limiting reagents in reactions(i),(ii) and (iii) respectively.



A. C, N_2, O_2

B. C, N_2, P_4

C. O_2, H_2, P_4

D. O_2, N_2, P_4

Answer: D

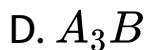


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28. A compound made up of two elements A and B is found to contain 25% A(atomic mass=12.5)and 75%B(atomic mass=37.5). The simplest formula of the compound is

A. AB

B. AB_2

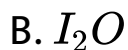


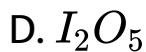
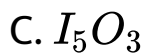
Answer: A



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29. On analysis is certain compounds was found to certain iodine and oxygen in the ratio of 254 g of iodine (atomic mass 127) and 80 g oxygen (at mass=16). What is the formula of the compound.



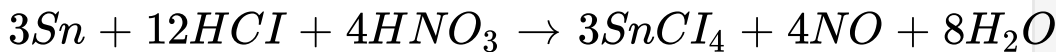


Answer: D



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30. The following equation is a completely balanced equation.



In the above reaction, the number of equivalent per formula weight of HNO_3 is

A. 3

B. 4

C. 1

D. 2

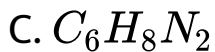
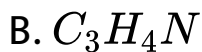
Answer: A



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31. In a compound C, H and N are present in 9:1:3:5 by weight. If molecular weight of the compound is 108, then the molecular formula of the compound is:

A. $C_2H_6N_2$



Answer: C



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32. Arrange the number in increasing no. of significant figures. 0.002600, 2.6000, 2.6, 0.260

A. $2.6 < 0.260 < 0.002600 < 2.6000$

B. $2.6000 < 2.6 < 0.002600 < 0.260$

C. 0.260 to 2.6 to 0.002600 to 2.6000

D. 0.002600 to 0.260 to 2.6000

Answer: A



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33. How many moles of lead (II) chloride will be formed from a reaction between 6.5 g of PbO and 3.2 g of HCl?

A. 0.044

B. 0.333

C. 0.011

D. 0.029

Answer: D



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34. Equal weights of NaCl and KCl are dissolved separately in equal volumes of solutions. Molarity of the two solutions will be:

A. equal

B. that of NaCl will be less than that of KCl

C. that of NaCl will be more than that of KCl solution

D. that of NaCl will be about of HCl solution.

Answer: C



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35. Gastric contains contains 3.0 g of HCl per liter. If a person produces 2.5 g of gastric juice per day. How many antacid tablets each containing 400 mg of $Al(OH_3)$ are needed to neutralize all the HCl produces per day?

A. 18

B. 14

C. 20

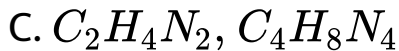
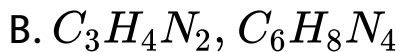
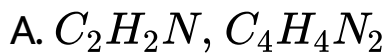
D. 17

Answer: B



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36. Which of the following is the correct empirical and molecular formulae of compound, if the molecular mass of a compound is 80 and compound contains 60% of C, 5% of H and 35% of N?



Answer: A



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37. A gas mixture of 3 liters of propane (C_3H_8) and butane (C_4H_{10}) on complete combustion at $25^\circ C$ produced 10 liter CO_2 . Find out the composition of gas mixture (Propane:Butane)

A. 2:1

B. 1:2

C. 1:5:1:5

D. 0.5:2.5

Answer: A



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38. Arrange the following in the order of increasing mass (atomic mass: $O = 16$, $Cu = 63$, $N = 14$) (i) one atom of oxygen (ii) one atom of nitrogen (iii)

1×10^{-10} mole of oxygen (iv) 1×10^{-10} mole of copper

A. 1×10^{-10} mole of oxygen (b)

B. 1×10^{-10} mole of oxygen

C. 1×10^{-10} mole of oxygen (d)

D. 1×10^{-10} mole of oxygen

Answer: A



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39. When 30 liters of H_2 and 30 liter N_2 are reacted NH_3 is formed and the ueild is only 50%. The

competition of the gaseous mixture will be

- A. $5\text{L of } N_2$, $5\text{L of } H_2$ and $5\text{L of } NH_3$.
- B. $5\text{L of } N_2$, $10\text{L of } H_2$ and $10\text{L of } NH_3$.
- C. $10\text{L of } N_2$, $15\text{L of } H_2$ and $5\text{L of } NH_3$.
- D. $5\text{L of } N_2$, $15\text{L of } H_2$ and $10\text{L of } NH_3$.

Answer: D



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40. How many moles of magnesium phosphate, $Mg_3(PO_4)_2$ will contain 0.25 mole of oxygen atoms?

A. 1.25×10^{-2}

B. 2.5×10^{-2}

C. 0.02

D. 3.125×10^{-2}

Answer: D



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41. 1.12 mL of a gas is produced at S.T.P by the action of 4.12 mg of alcohol ROH with methyl magnesium iodide. The molecular mass of alcohol is

A. 16

B. 41.2

C. 82.4

D. 156

Answer: C



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42. If 224 mL of a triatomic gas has a mass of 1 g at 273K and 1 atmosphere pressure then the mass of one atom is

A. 8.30×10^{-23}

B. 2.08×10^{-23}

C. 5.53×10^{-23}

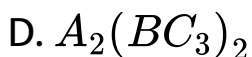
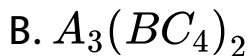
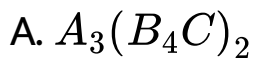
D. 6.24×10^{-23}

Answer: C



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43. A compound contains atoms of three elements as A,B and C. If the oxidation number of A is +2, B is +5 and that of C is -2, the possible formula of the compounds is



Answer: B



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44. 5 moles of SO_2 and 5 moles of O_2 react to form O_3 . Number of moles left in total when only 60% SO_2 is used is

A. 6.5

B. 10

C. 8

D. 8.5

Answer: D



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