CHEMISTRY

BOOKS - ARIHANT CHEMISTRY (HINGLISH)

SOME BASIC CONCEPTS OF CHEMISTRY

Practice Exercie

1. The answer of the calculation $\frac{2.568 \times 5.8}{4.168}$ in significant figures will be

A. 3.57

B. 3.6

C. 3.57

D. 3.579

Answer:

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2. Which of the following statements about a compound is incorrect?

A. A molecule of a compound has atoms of different elements

B. A compound cannot be separated into its constituent elements by physical methods of separation

C. A compound retains the physical properties of its constituent elements.

D. The ratio of atoms of different elements in a compound is fixed

Answer:

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3. Two students performed the same experiment separately and each one of them recovered two readings of mass which are given below. Correct reading of mass is 3.0 g. On the basis of given data, mark the correct

optioin out of the following statements.

Student	Readings	
	(I)	(II)
A	3.01	2.99
B	3.05	2.95

A. Results of both the students are neither accurate nor precise

B. Results of student A are both precise and accurate

C. Results of student B are neither precise nor accurate

D. Resuls of student B are both precise and accurate

Answer:

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4. What is the SI unit of density?

A. gm^{-3}

B. kg/m^3

C. gcm^{-3}

D. kg / cm^3

Answer:

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5. What temperature is 75° F on the Kelvin scale?

A. 24 K

B. 348 K

C. 297 K

D. 215 K

Answer:

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6. A jug contains 2L of milk. Calcualte the volume of the milk in m^3

A. $2 \times 10^{-2} m^3$

B. 2×10^{-1}

C. $2 \times 10^{-3} m^3$

D. 2×10^{-4}m

Answer:

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7. Law of constant composition doesnot hold good for

A. Endothermic compounds

B. exothermic compounds

C. stoichiometric compounds

D. non-stoichiometric compounds

Answer:

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8. One gram mole of a gas at NTP occupies 22.4 L. This fact is derived from

A. law of gaseous volumes

B. Avogadro's hypothesis

C. Dalton's atomic theory

D. Berzelius hypothesis

Answer:

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9. One part of element A reacts with two parts of another element B. 6 parts of element C reacts with 4 parts of element B. If A and C combine together, the ratio of their weights be governed by

A. Law of conservation of mass

B. law of reciprocal proportions

C. law of definite proportions

D. law of multiple proportions

Answer:

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10. In which of the following numbers all zeroes are significant?

A. 30000

B. 0.7

C. 0.0005

D. 0.003

Answer:

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11. Which of the following is a homogeneous mixture?

A. Mixture of soil and water

B. Sugar solution

C. Mixtures of sugar, salt and water

D. Iodised table salt

Answer:

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12. Formation of CO and CO_2 illustrates the law of

A. Conservation of mass

B. multiple proportion

C. reciprocal proportion

D. constant proportion

Answer:

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13. Which of the following reactions is not correct according to the law of conservationof mas?

A. 2Mg(s) + O_2(s) $\rightarrow$ 2MgO(s)`

B. $C_3H_8(g) + O_2 \rightarrow CO_2(g) + H_2O(g)$

C. $P_4(s) + 5O_2(g) \rightarrow P_4O_{10}(s)$

D.

$$CH_4(g) + 2O_2(g) \rightarrow CO_2(g) + 2H_2O(g)$$

Answer:

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14. Carbon dioxide contains 27.27% of carbon, carbon disulphide contains 15.79% of carbon and sulphur dioxide contains 50% of sulphur. This data is an agreement with

A. Law of conservatino of mass

B. law of definite proportions

C. law of multiple proportions

D. law of reciprocal proportions

Answer:

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15. One atom of an element weighs 1.8×10^{-22}g, its atomic mass is

A. 18

B. 29.4

C. 108.39

D. 154

Answer:

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16. 27 g of Al (at mass=27) will react completely with oxygen equal to

A. 24 g

B. 8g

C. 40 g

D. 10 g

Answer:

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17. Insulin contains 3.4% sulphur. What will be the minimum molecular weigh of insulin?

A. 94.117

B. 1884

C. 941.176

D. -976

Answer:

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18. Molecualr weight of a tribasic acid is W. Its equivalent weight will be

A. $\frac{W}{2}$

B. W

C. W/3

D. 3W

Answer:

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19. Compounds having some empirical formula always have same

A. Molecular mass

B. Molecular formula

C. number of atoms

D. percentage composition by mass

Answer:

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20. What is the equivalent weight of $SnCl_2$ in the reaction,

$SnCl_2 + Cl_2 \rightarrow SnCl_4$? (mol.wt. of $SnCl_2$ =190)

A. 95

B. 45

C. 60

D. 30

Answer:

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21. 5.6 L of a gas at NTP weighs equal to 8g. The vapour density of gas is

A. 32

B. 16

C. 8

D. 40

Answer:

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22. The number of atoms presentin 0.1 mole of P_4 (at mass = 31) are

A. 2.4×10^{23} atoms

B. same as in 0.05 mole of S_8

C. 6.02×10^{22} atoms

D. same as in 3.1 g of phosphorus

Answer:

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23. The number of water molecules present in a drop of water (volume = 0.0018mL) at room temperature is

A. `1.084 xx 10^(18)

B. 6.023×10^{23}

C. 3.01×10^{23}

D. 6.023×10^{23}

Answer:

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24. The number of atoms in $4.25gNH_3$ is approximately:

A. 1.505×10^{23}

B. 6.02×10^{23}

C. 3.01×10^{23}

D. None of these

Answer:

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25. Choose the wrong statement

A. Molar mass is the mass of one molecule

B. Molar mass is the masss of one mole of substance

C. 1 mole means 6.023×10^{23} particles

D. Molar mass is the molecular mass (g)

Answer: A

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26. A sample of AlF_3 contains 3.0×10^{24} F^- ions. The number of formula units of the sample are

A. 9.0×10^{24}

B. 3.0×10^{24}

C. 0.75×10^{24}

D. 1.0×10^{24}

Answer:

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27. Which of the following pairs contain equal number of atoms?

A. 22.4 L (STP) of nitrous oxide and 22.4 L of nitrifc oxide

B. 1 millimole of HCl and 0.5 millimole of H_2S

C. 1 mole of H_2O_2 and 1 mole of N_2O_4

D. 11.2 cc (STP) of nitrogen and 0.015g of nitric oxide

Answer:

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28. Vapour density of a gas is 11.2. Volume occupied by 2.4 g of this at STP will be

A. 2.4 L

B. 2.24 L

C. 22.4 L

D. 11.2L

Answer:

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29. Which of the following weigh the most?

A. One mole of water

B. one gram atomof nitrogen

C. One molecule of H_2SO_4

D. one mole of sodium

Answer:

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30. The total numebr of electrons present in 18 mL of water density=1gmL^(-1)` is

A. 6.02×10^{23}

B. 6.02×10^{23}

C. 6.02×10^{24}

D. 6.02×10^{25}

Answer:

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31. If 1 mL of water contains 20 drops, what is the number of water molecules in the one drop of water? (A = Avogadro's number)

A. $\frac{0.5}{18}$A

B. 0.05A

C. $\frac{0.05}{18}$A

D. 0.5 A

Answer:

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32. 3 g of an oxide of a metal Is converted to chloride completely and it yielded 5 g of chloride. The equivalent weight of the matel is

A. 33.25

B. 3.325

C. 12

D. 20

Answer:

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33. Assuming that the density of water to be $1g/cm^3$, calculate the volume occupied by one molecule of water.

A. 2.989×10^{-23}mL

B. $6.023 \times 10^{23}\ cm^3$

C. 0.288×10^{-3}

D. $1.66 \times 10^{9} - 2)$

Answer:

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34. If 0.5 mole of $BaCl_2$ are mixed with 0.2 mole of Na_3PO_4,the maximum number of moles. Of $Ba_3(PO_4\_(2))$ that can be formed, is

A. 0.7

B. 0.5

C. 0.3

D. 0.1

Answer:

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35. If 10^{21} molecules are removed from 200g of CO_2, the number of mole(s) of CO_2 left is/are

A. 2.88×10^{-3}

B. 28.8×10^{-3}

C. 0.288×10^{-3}

D. 1.66×10^{-2}

Answer:

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36. Which of the following paris of gases contains the same number of molecules?

A. 16 g of O_2 and 14 g of N_2

B. 8 g of O_2 and 22g of CO_2

C. 32 g of O_2 and 32 g of N_2

D.

Answer:

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37. $10dm^3$ of N_2 gas and $10dm^3$ of gas X contain the same number of molecules at the same temperature, the gas (X) may be

A. CO

B. CO_2

C. H_2

D. NO

Answer:

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38. A metal oxide contains 53% metal and carbon dioxide contains 27% carbon. Assuming the law of reciprocal proportions, the percentage of metal in the metal carbide is

A. 75

B. 25

C. 37

D. 66

Answer:

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39. The number of g-molecules of oxygen in 6.0×10^{24} CO molecules is: $[Take: N_A = 6 \times 10^{23}]$

A. 10

B. 5

C. 1

D. 0.5

Answer:

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40. The weight of 1×10^{22} molecules of $CuSO_4.5H_2O$ is

A. 41.59g

B. $415.9g$

C. $4.159g$

D. None of these

Answer: C

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41. The sulphate of a metal M contains 9.87% of M. The sulphate is isomorphous with $ZnSO_4.7H_2O$. The atomic weight of M is

A. 40.3

B. 36.3

C. 24.3

D. 11.3

Answer:

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42. Rearragne the following (I to IV) in the order of increasing masses and choose the correct answer (Atomic masses O=16, Cu=63

and N=4)

I. 1 Molecule of oxygen

II. 1 atom of nitrogen

IIIgt 1×10^{-10}g atomic weight of copper

`

A. II lt I lt III lt IV

B. IV lt III lt II lt I

C. II lt III lt I lt IV

D. III lt IV lt I lt II

Answer:

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43. How many moles of magnesium phosphate, $Mg_3(PO_4\_(2)$ will contain 0.25 mole of oxygen atoms?

A. 0.02

B. 3.125×10^{-2}

C. 1.25×10^{-2}

D. 2.5×10^{-2}

Answer:

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44. If $1/6$, in place of $1/12$, mass of carbon atom is taken to be the relative atomic mass unit, the mass of one one of a substance will:

A. to be a function of the molecular mass of the substance

B. remian unchanged

C. increase two fold

D. decrease twice

Answer:

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45. If 6.3 g of $NaHCO_3$ are added to 15.0 g CH_3COOH solution, the residue is found of weight 18.0 g. What is the mass of CO_2 released in the reaction?

A. 4.5 g

B. 3.3g

C. 2.6g

D. 2.8g

Answer:

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46. consider the following reaction,

$$Na_2CO_3 + 2HCl \rightarrow 2NaCl + H_2O + CO_2$$

Equivalent weight of Na_2CO_3 is

A. $\frac{M}{2}$

B. M

C. 2M

D. $\frac{M}{4}$

Answer:

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47. The weight of lime obtained by heating 200 Kg of $95\ \%$ pure lime stone is

A. 98.4 kg

B. 106.4 kg

C. 112.8 kg

D. 122.6 kg

Answer:

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48. What will be the weight of CO having the same number of oxygen atoms at present in 22 g of CO_2?

A. 28 g

B. 22 g

C. 44 g

D. 72 g

Answer:

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49. An organic compound containing C and H has 92.3 % of carbon, its empirical formula is

A. CH

B. CH_3

C. CH_2

D. CH_4

Answer:

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50. Mass of 0.1 moleof methane is

A. 1g

B. 16 g

C. 1.6 g

D. 0.1 g

Answer:

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51. A person adds 1.71 g of sugar $(C_{12}H_{22}O_{11})$ in order to sweeten his tea. The number of carbon atoms added are (molecular mass of sugar = 342)

A. 3.6×10^{22}

B. 7.2×10^{21}

C. 0.05

D. 6.6×10^{22}

Answer:

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52. The one which has least mass, is

A. 2 g atom of N

B. 3×10^{23} atoms of C

C. 1 mole of S

D. 7.0 g of Ag

Answer:

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53. 19.7 kg of gold was recovered from a smuggler. How many atoms of gold were recovered?

A. 100

B. 6.02×10^{23}

C. 6.02×10^{24}

D. 6.02×10^{25}

Answer:

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54. If 8.5 g of hexane burns completely in oxygen, how many moles of CO_2 is/are produced?

A. 6

B. 0.6

C. 0.9

D. 1.2

Answer:

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55. The number of atoms in 4.25 g of NH_3 is approximately

A. 1×10^{23}

B. 1.5×10^{23}

C. 2×10^{23}

D. 6×10^{23}

Answer: D

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56. Two elements x (at mass = 75) and y(at mas=16) combine to give a compound having 75.8% x. The formula of the compound is

A. xy

B. x_2y

C. x_2y_2

D. x_2y_2

Answer:

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57. If we take 44 g of CO_2 and 14 g of N_2. What will be the mole fraction of CO_2 in the mixture?

A. $\frac{1}{5}$

B. $\frac{1}{3}$

C. $\frac{2}{3}$

D. $\frac{1}{4}$

Answer:

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58. One mole of calcium phosphide on reactioin with excess of water gives

A. one mole of phosphine

B. Two moles of phosphoric acid

C. two moles of phophine

D. one mole of phosphorus pentoxide

Answer:

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59. The volume of water to be added to $100cm^3$ of 0.5 N H_2SO_4 to get decinormal concentration, is

A. 100 cm^3

B. $450cm^3$

C. $500cm^3$

D. $400cm^3$

Answer:

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60. 5 mL of N HCl, 20 mL of N/2 H_2SO_4 and 30 mL of $\frac{N}{3}HNO_3$ are mixed together and

volume made to 1L. The normality of resulting solution is

A. 0.45

B. 0.025

C. 0.9

D. 0.05

Answer:

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61. Consider the following reactioin,

$2Al(s) + 6HCl(aq) \rightarrow 2Al^{3+}(aq) + 6Cl^{-}(aq) + 3H_2(g)$

Which of the following statements is incorrect?

A. 6 L HCl (aq) is consumed for every $3LH_2$ (g) produced

B. 33.6 L H_2(g) is produced regardless of temperature and pressure for every mole of Al that reacts

C. 67.2 L H_2 L H_2(g) at STP, is produced for every mole of AI that reacts

D. 11.2 L H_2 (g) at STP, is produced for every mole of HCl (aq) consumed

Answer:

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62. Two solutions of a substances (non-electrolyte) are mixed in the manner, 480 mL

of 1.5 M of first solution with 250 mL of 1.2 M of second solution.

A. 1.20 M

B. 1.50 M

C. 1.344 M

D. 2.70 M

Answer:

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63. Amount of oxalic acid present in a solution can be determined by its titration with $KMnO_4$ solution in the presence of H_2SO_4. The titration gives unsatisfactory result when carried out in the presence of HCl because HCl

A. gets oxidised by oxalic acid to chlorine

B. Furnishes H^+ ions in addition to those from oxalic acid

C. reduces permanganate to Mn^{2+}

D. oxidises oxalic acid to carbon dioxide and water

Answer:

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64. Consider the following reactions,

$$CH_4(g) + 2O_2(g) \rightarrow CO_2(g) + 2H_2O(g)$$

How many moles of methane are required to produce 22g of CO_2(g) after combustion?

A. 1 mole

B. 0.5 mole

C. 0.25 mole

D. 1.25 mole

Answer:

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65. Which of the following gases will have least volume if 10 g of each gas is taken at same temperature and pressure?

A. CO_2

B. N_2

C. CH_4

D. HCl

Answer:

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66. A solution is made by dissolving 49 g of H_2SO_4 in 250 mL of water. The molarity of the solution prepared is

A. 2 M

B. 1 M

C. 4 M

D. 5 M

Answer:

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67. What volume of water is to be a added to $100cm^3$ of 0.5 M NaOH solution to make it 0.1 M solution?

A. 200 cm^3

B. 400 cm^3

C. 500 cm^3

D. 100 cm^3

Answer:

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68. What will be the molality of the solution made by dissolving 10g of NaOH in 100g of water?

A. 2.5 m

B. 5 m

C. 10 m

D. 1.25m

Answer:

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69. How much of NaOH is reuired to neutralise 1500 cm^3 of 0.1 N HCl (Na=23)?

A. 40 g

B. 4 g

C. 6 g

D. 60 g

Answer:

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Bitsat Archives

1. 10 g of sample of mixture of $CaCl_2$ and NaCl are treated to precipitate all the calcium as $CaCO_3$. This $CaCO_3$ is heated to convert all the Ca to CaO and the final mass of $CaCl_2$ in the original mixture is

A. 0.321

B. 0.162

C. 0.218

D. 0.12

Answer:

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2. The volume respectively of 10 N and 4 N HCl required to make 1 L of 7 N HCl respectively are

A. 0.75 L of 10 N HCl and 0.25 L of 4N HCl

B. 0.50 L of 10N HCl and 0.50 L of 4 N HCl

C. 0.65 L pof 10 N HCl and 0.35 L of 4N HCl

D. 0.85 L of 10 N HCl and 0.15 L of 4 N HCl

Answer:

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3. 0.1 g of metal combines with 46.6 mL of oxygen at STP. The equivalent weight of metal is

A. 12

B. 24

C. 18

D. 36

Answer:

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4. 5 moles of $Ba(OH)_2$ are treated with excess of CO_2. How much $Ba(OH_2$ will be formed?

A. 39.4 g

B. 197 g

C. 591 g

D. 985g

Answer:

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5. One mole of P_2O_5 undergoes hydrolysis as

$P_2O_5 + H_2O \rightarrow H_3PO_4$

The normality of the phosphoric acid formed is (Volume of the solution is 1L)

A. 2

B. 12

C. 24

D.

Answer: D

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6. 1 g of hydrogen is found to combine with 80g of bromine and 1g of calcium combines with 4 g of bromine. Equivalent weight of calcium is

A. 16

B. 20

C. 40

D. 80

Answer:

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7. How much water should be added to 200 mL of semi normal solution of NaOH to make it exactyly decinormal?

A. 200 mL

B. 800 mL

C. 1000 mL

D. 11200 mL

Answer:

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8. Match the following columns.

	Column I		Column II (At STP)
A	10 g $CaCO_3$ $\xrightarrow[\text{Decomposition}]{\Delta}$	1.	0.224 L CO_2
B	1.06 g Na_2CO_3 $\xrightarrow{\text{Excess HCl}}$	2.	4.48 L CO_2
C	2.4 g C $\xrightarrow[\text{combustion}]{\text{Excess } O_2}$	3.	0.448 L CO_2
D	0.56 g CO $\xrightarrow[\text{combustion}]{\text{Excess } O_2}$	4.	2.24 L CO_2
		5.	22.4 L CO_2

A. a 4, b 1, c 2, d 3

B. a 5, b 1, c 2, d 3

C. a 4, b 1, c 3, d 2

D. a 1, b 4, c 2, d 3

Answer: