CHEMISTRY

BOOKS - MODERN PUBLICATION CHEMISTRY (KANNADA ENGLISH)

SOME BASIC CONCEPTS OF CHEMISTRY

Multiple Choice Question Level I

1. The number of significant figures in 0.0230 is :

A. 2

B. 3

C. 4

D. 5

Answer: B

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2. The number of significant figures in 1.00×10^6 is:

A. one

B. three

C. eight

D. eleven

Answer: B

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3. The distance of the sun from the earth is 93,000,000 miles. The number of significant figures is

A. eight

B. seven

C. two

D. between 2 and 8

Answer: C

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4. Which of the following numbers has three significant figures ?

A. 0.009

B. 321.00

C. 1023

D. 0.0300

Answer: D

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5. In which of the following numbers, all zeros are significant ?

A. 2.0E-5

B. 0.0020

C. 10.000

D. 0.200

Answer: C

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6. The number 32.392800 may be written upto three significant figures as:

A. 32.4

B. 0.323×10^2

C. 34.2

D. 32.393

Answer: C

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7. The decimal equivalent of 2/5 may be written upto four significant figures as :

A. 0.4

B. 4.0×10^{-1}

C. 0.4000

D. 0.04000

Answer: C

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8. The value of Planck's constant is $6.62618 \times 10^{-34} Js$.

The number of significant figures in it is :

A. six

B. five

C. three

D. thirty-four

Answer: A

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9. Calculate the result of 15. - 0.072 to proper number of significant figures:

A. 15

B. 14.928

C. 14.9

D. 14.93

Answer: A

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10. Calculate to the correct number of significant figures :

4.26 - (15.635/5.0)

A. 1.13

B. 1.2

C. 1.1

D. 1.133

Answer: B

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11. Find the sum to the proper number of significant figures : 12.90 + 0.0068 + 0.082 + 1.1

A. 14.0888

B. 14

C. 14.0

D. 14.1

Answer: D

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12. Add $4.00 \times 10^{-2}, 3.26 \times 10^{-3}$ and 1×10^{-6} to the correct number of significant digits :

A. 4.3261×10^{-2}

B. 4.33×10^{-2}

C. 4.3×10^{-2}

D. cannot be calculated

Answer: B

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13. $\left(3.50 \times 10^2 mL\right) - \left(0.0225L\right)$ may be written to correct significant digits :

A. $3.28 \times 10^2 mL$

B. $0.3275L$

C. $0.33L$

D.

Answer: A

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14. The correct answer of 126/8.0 is (upto proper number of significant figures) :

A. 15.75

B. 16

C. 15.7

D. none of these

Answer: B

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15. $(12.5)^2$ upto correct number of significant figures is:

A. 156

B. 156.2

C. 156.25

D. 1.562×10^2

Answer: A

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16. The correct answer upto required number of significant figures of 0.083 x 10.1 is :

A. 0.8383

B. 0.84

C. 0.83

D. 0.083

Answer: B

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17. The correct number of significant figures in the answer of 0.00383 -0.00303 is :

A. two

B. five

C. one

D. four

Answer: A

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18. The correct answer upto appropriate number of significant figures for 50.0 x 0.0160 + 19 is:

A. 19.8

B. 19

C. 20.

D. 20.0

Answer: C

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19. Perform the following calculations and calculate the answer to the proper number of significant figures : $144.3m^2 + (2.54mx8.4m)$

A. $165.336m^2$

B. $165m^2$

C. $165.3m^2$

D. $165.34m^2$

Answer: B

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20. 81.4 g sample of ethyl alcohol contains 0.002 g of water. The amount of pure ethyl alcohol (to proper number of significant figures) is :

A. 81.398 g

B. 81.40 g

C. 81.4 g

D. 81 g

Answer: C

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21. The result of $\frac{2.36 \times 0.07251}{2.103}$ will contain the significant figures equal to

A. three

B. four

C. two

D. seven

Answer: A

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22. The number of significant figures in π are:

A. three

B. Infinite number

C. zero

D. one

Answer: B

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23. The correct answer upto proper number of significant digits : $\left(2.50x10^{-2}km\right) + \left(3.7 \times 10^{2}cm\right)$ is :

A. 6.20 km

B. 28.7 m

C. 49.50 cm

D. cannot be calculated

Answer: B

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24. The number of significant zeros in 0.001010 is :

A. two

B. three

C. four

D. one

Answer: A

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25. Which of the following has largest number of significant figures?

A. 11.309

B. 1.00004

C. 615

D. 9.035

Answer: B

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26. The number of significant figures in $(0.04)^2 + (0.25)^2$ is :

A. one

B. two

C. three

D. four

Answer: B

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27. The height of a boy who is 5 feet and 9 inches may be written with three significant figures as (1 inch = 2.54 cm)

A. 175.3 cm

B. 175.26 cm

C. $0.1753 \times 10^3 cm$

D. $1.75 \times 10^2 cm$

Answer: A

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28. The radius of a hydrogen atom is 5.32×10^{-11} m and the radius of a proton at the centre is 1.5×10^{-5} m. The ratio of the radius of the atom to the radius of proton is :

A. 3.5×10^{-6}

B. 3.54×10^{-6}

C. 3.55×10^{-6}

D. 4×10^{-6}

Answer: A

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29. Candela is S.I. unit of

A. Electric current

B. Energy

C. Luminous Intensity

D. Stress

Answer: C

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30. The S.I. unit of pressure is :

A. Torr

B. Atmosphere

C. Pascal

D. Dynes per square metre

Answer: C

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31. The prefix femto stands for

A. 10^9

B. 10^{-12}

C. 10^{-15}

D. 10^5

Answer: C

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32. The multiple 10^{12} has the prefix :

A. peta

B. pico

C. giga

D. tera

Answer: D

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33. How many times is a kg heavier than a mg?

A. 10^3

B. 10^5

C. 10^6

D. 10^9

Answer: C

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34. Nkg^{-1} is the unit of:

A. Momentum

B. Velocity

C. Pressure

D. Acceleration

Answer: D

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35. The density of vanadium is $5.968 cm^{-3}$. Its density in SI units of kgm^{-3} is

A. 59.6

B. 5.96×10^4

C. 596

D. 5960

Answer: D

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36. The average weight of an Indian male is 150 pounds. In SI units it is equal to

A. 68.1 kg

B. 75.0 kg

C. 45.4 kg

D. 72.0 kg

Answer: A

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37. The law of multiple proportion may be illustrated by

A. KBr, KI

B. H_2O, D_2O

C. CO, CO_2

D. $CaO, CaCO_3$

Answer: B

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38. Which of the following is not a mixture ?

A. gasoline

B. liquid petroleum gas

C. distilled water

D. iodized table salt

Answer: C

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39. Nitrogen forms five stable oxides having formulae N_2O, NO, N_2O_3, N_2O_4 and N_2O_5 . The formation of these oxides explains the

A. law of definite proportion

B. law of multiple proportion

C. law of reciprocal proportion

D. law of conservation of mass

Answer: C

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40. Equal volumes of different gases at a fixed temperature and pressure :

A. have equal weights

B. equal masses

C. equal densities

D. equal number of moles

Answer: A

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41. Water and hydrogen peroxide illustrate the law of:

A. reciprocal proportion

B. multiple proportion

C. constant propotion

D. definite composition

Answer: A

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42. The percentage of silver and chlorine in two samples of silver chloride prepared by heating silver foil in the current of chlorine and by the intercation of silver nitrate and hydrochloric acid were found to be identical . This illusrates the law of :

A. conservation of mass

B. constant proportion

C. multiple proportion

D. reciprocal proportion

Answer: C

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43. Which of the following represents Avogadro's hypothesis ?

A. Gases react together in volumes which bear a simple ratio to one another

B. One mole of all gases occupies 22.4 L at N.T.P.

C. Equal volumes of all gases under the same conditions of temperature and pressure contain equal number of atoms.

D. Equal volumes of all gases under the same conditions of temperature and pressure contain equal number of molecules

Answer: A

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44. a' grams of element A combine with 'b' grams of element B. 'b' element C. if elements A and C combine , the

probable ratio in which their weights combine together could be

A. 2a:b

B. a:c

C. 2b:a

D. 2b:c

Answer: B

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45. A sample of $CaCO_3$ has Ca = 40%, C = 12% and O = 48%. If the law of constant proportion is true then the

weight of calcium in 5 g of a sample of $CaCO_3$ from another source will be

A. 0.20 g

B. 2.0 g

C. 2.5 g

D. 4.0 g

Answer: B

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46. One gram mole of a gas at N.T.P. occupies 22.4 litres. This fact was derived from :

A. Law of gaseous volumes

B. Avogadro's hypothesis

C. Berzelius hypothesis

D. Dalton's atomic theory

Answer: B

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47. Two elements X and Y have atomic masses 14 and 16 respectively. They can form a series of five compounds A, B, C, D and E in which for the same amount of X, Y is present in the ratio of 1:2:3:4:5. If the compound A has 28 parts by weight of X and 16 parts by weight of Y, then

compound C will have 24 parts by weight of Y combined with

A. 28 parts by weight of X

B. 14 parts by weight of X

C. 8 parts by weight of X

D. 4.1 parts by weight of X

Answer: B

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48. Two elements X (atomic weight = 75) and Y (atomic weight = 16) combine to give a compound having 75.8% of X. The compound is :

A. XY

B. X_2Y

C. X_2Y_2

D. X_2Y_3

Answer: D

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49. One a.m.u. stands for

A. an atom of carbon $\left(C^{12}\right)$

B. 1/12th of a carbon atom $\left(C^{12}\right)$

C. 1/12th of a H-atom.

D. 1 atom of all atoms

Answer: B

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50. Volume of a gas at STP is $1.12 \times 10^{-7} cm^3$ .The number of molecules present in it is

A. 3.01×10^8

B. 3.01×10^{22}

C. 3.01×10^{11}

D. 3.01×10^{12}

Answer: C

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51. How many times an atom of sulphur is heavier than an atom of carbon ?

A. 32 times

B. 12 times

C. 8/3 times

D. 12/32 times

Answer: C

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52. The ratio of mass of 1 mole of sodium and 10^{23} atoms of sodium is :

A. 6.02

B. 23

C. $\frac{23}{6.02}$

D. 23×6.02

Answer: A

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53. 1/12 of the gram atom of carbon

A. contains 1 atom of carbon

B. contains the same number of carbon atoms as are present in 2.5 grams of glucose $(C_6H_{12}O_6)$

C. contains Avogardo number of carbon atoms

D. corresponds to 1 a.m.u.

Answer: B

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54. The number of moles in 0.64 g of SO_2 is :

A. 100

B. 10

C. 0.1

D. 0.01

Answer: D

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55. The mass of an atom of carbon is :

A. 1g

B. 1/12 g

C. $1.99 \times 10^{-23} g$

D. $1.99 \times 10^{23} g$

Answer: C

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56. The volume occupied by 0.2 mole of methane at N.T.P. is :

A. 4.48 L

B. 8.96 L

C. 4.4 L

D. 2.24 L

Answer: A

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57. Which of the following weighs the least ?

A. 2 gram atoms of N

B. 3×10^{23} atoms of C

C. 20 g of CO_2

D. 1 mole of SO_2

Answer: B

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58. The number of O_3 molecules in 16 g of ozone is approximately.

A. 2×10^{23}

B. 3×10^{23}

C. 4×10^{23}

D. 6×10^{23}

Answer: A

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59. The total number of atoms present in 0.1 mole of sucrose $(C_{12}H_{22}O_{11})$ is :

A. 6.02×10^{22}

B. 2.7×10^{24}

C. 6.02×10^{24}

D. 2.7×10^{25}

Answer: B

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60. The number of gram atoms of oxygen present in 0.25 g mole of $(COOH)_2 2H_2O$ is :

A. 0.125

B. 0.5

C. 1

D. 1.5

Answer: D

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61. Which of the following has maximum number of molecules ?

A. 1 g of CO_2

B. 1 g of N_2

C. 1 g of H_2

D. 1g of CH_4

Answer: C

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62. Which of the following weighs the maximum ?

A. 2.24 L of CO_2 at N.T.P.

B. 6.02×10^{23} molecules of CO_2

C. 6.02×10^{23} atoms of carbon

D. 10 g of carbon

Answer: B

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63. The mass of one molecule of oxygen is:

A. 32 g

B. $32/6.02 \times 10^{23} g$

C. $16/6.02 \times 10^{23}$

D. $0.32 g$

Answer: B

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64. The number of atoms present in 1 g of hydrogen gas is the same as are present in

A. 0.4 g of He

B. 22 g of CO_2

C. 6 g of H_2O

D. 12 g of C

Answer: C

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65. The number of molecules in 4.25 g of ammonia are approximately

A. 0.5×10^{23}

B. 1.5×10^{23}

C. 2.5×10^{23}

D. 3.5×10^{23}

Answer: B

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66. The number of atoms in 0.004 g of magnesium is close to (atomic mass of Mg = 24)

A. 24

B. 2×10^{20}

C. 10^{20}

D. 6.02×10^{23}

Answer: C

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67. One mole of CO_2 corresponds to :

A. 22.4 L at 1 atm and $25^\circ C$

B. 44g

C. 1g of carbon dioxide.

D. 6.02×10^{23} C-atoms and 6.02×10^{23} O atoms

Answer: B

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68. Which of the following has maximum mass ?

A. 25 gram of iodine

B. 2.5 gram atom of oxygen gas

C. 2.5 gram mole of water

D. 2.5 gram mole of nitrogen gas

Answer: D

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69. How many molecules of sulphur are present in 12.8 g of sulphur (atomic mass of S = 32) ?

A. 3.01×10^{22}

B. 2.408×10^{23}

C. 6.02×10^{23}

D. 0.4

Answer: A

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70. One gram is more than

A. 0.1 mol of CO_2

B. mass of 6.02×10^{22} molecules of water

C. mass of 2.24 L of hydrogen gas at N.T.P.

D. 0.1 gram atom of carbon

Answer: C

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71. The number of atoms of oxygen present in 11.2 L of ozone at N.T.P. are :

A. 3.01×10^{23}

B. 6.02×10^{23}

C. 9.03×10^{23}

D. 1.20×10^{24}

Answer: C

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72. How many moles of helium gas occupy 22.4L at $O^{\circ}C$ and 1 atm pressure ?

A. 0.11

B. 0.9

C. 1

D. 1.11

Answer: C

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73. The number of gram molecules of oxygen in 6.02×10^{24} CO molecules is :

A. 10 gram molecules

B. 5 gram molecules

C. 1 gram molecule

D. 0.5 gram molecule

Answer: B

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74. How many formula units are there in a 42 g sample of $(NH_4)_2Cr_2O_7$ (formula wt.=252g) ?

A. 7.0×10^{23}

B. 1.0×10^{23}

C. 6.0×10^{23}

D. 1.4×10^{22}

Answer: B

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75. A sample of AlF_3 contains $3.0 \times 10^{24} F^-$ ions. The number of formula units of this sample is :

A. 2.0×10^{24}

B. 1.0×10^{24}

C. 5×10^{23}

D. 9.0×10^{24}

Answer: B

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76. Which of the following has the smallest number of molecules ?

A. 0.1 mole of CO_2 gas

B. 11.2 L of CO_2 gas

C. 22 g of CO_2 gas

D. 22.4×10^3 ml of CO_2 gas

Answer: A

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77. One mole of CO_2 contains

A. 6.02×10^{23} atoms of C

B. 6.02×10^{23} atoms of O

C. 18.1×10^{23} molecules of CO_2

D. 3 g atoms of CO_2

Answer: A

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78. Which of the following weighs the least?

A. 24 g of magnesium

B. 0.9 mole of nitric oxide

C. 22.4 L of N_2

D. 6.02×10^{24} molecules of oxygen

Answer: A

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79. The number of molecules in 89.6 L of a gas at $0^\circ C$ and 1 atm pressure is :

A. 6.02×10^{23}

B. 12.04×10^{23}

C. 18.06×10^{23}

D. 24.08×10^{23}

Answer: D

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80. The volume occupied by 2.2 g of CO_2 at N.T.P. is :

A. 22.4L

B. 1.12 L

C. 5.6 L

D. 2.24 L

Answer: B

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81. The largest number of molecules is in:

A. 36 g of water

B. 28 g of CO_2

C. 46 g of CH_3OH

D. 54 g of N_2O_5

Answer: A

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82. Which of the following has maximum number of molecules ?

A. 5 L of N_2 gas at STP

B. 0.5 g of H_2 gas

C. 10 g of O_2 gas

D. 15 L of H_2 gas at STP

Answer: D

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83. The number of atoms in 0.1 mol of a triatomic gas is :

$\left(N_A = 6.02 \times 10^{23} \text{mol}^{-1}\right)$

A. 3.600×10^{23}

B. 1.800×10^{22}

C. 6.02×10^{22}

D. 1.806×10^{23}

Answer: D

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84. A phosphorus oxide has 43.6% phosphorus (at. mass=31). The empirical formula of the compound is :

A. P_2O_5

B. P_2O_3

C. P_4O_6

D. PO_2

Answer: A

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

A. X_2Y

B. XY_2

C. X_2Y_3

D. XY

Answer: A

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

A. AB

B. AB_2

C. AB_3

D. A_3B_2

Answer: A

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87. The simplest formula of a compound containing 32.5% K, 0.839% H, 26.7% S and 39.9% O is

A. $KHSO_4$

B. $KHSO_3$

C. $K_2SO_4.2H_2O$

D. $KHSO_2$

Answer: B

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88. A hydrocarbon is composed of 75% carbon. The empirical formula of the compound is

A. CH_2

B. CH_3

C. C_2H_5

D. CH_4

Answer: D

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89. How many moles of NaOH are present in 27mL of 0.015 M NaOH ?

A. 4.05×10^{-3}

B. 4.05×10^{-4}

C. 4.05

D. 0.0405

Answer: B

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90. Commercially available concentrated HCI contains 38.0% HCl by mass (density = 1.19 gmL^{-1}). The molarity of the solution is

A. 10.40 M

B. 5.70 M

C. 12.38 M

D. 13.46 M

Answer: C

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91. 4L of water is added to 2L of 6M HCl. The molarity of the final solution is

A. 4M

B. 2M

C. 1M

D. 0.5M

Answer: B

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92. 0.38 g sample of $NaNO_3$ is dissolved in 250 ml flask. The molarity of the solution is

A. 0.018 M

B. 0.095 M

C. 0.260 M

D. 0.016 M

Answer: A

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93. The molarity of 98% H_2SO_4 (d = 1.8 g/mL) by weight is

A. 6 M

B. 18 M

C. 10 M

D. 4 M

Answer: B

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94. The molarity of a solution obtained by mixing 800 mL of 0.5 M HCl with 200 mL of 1 M HCI will be

A. 0.8 M

B. 0.6 M

C. 0.4 M

D. 0.2 M

Answer: B

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95. Which of the following concentration terms is/are independent of temperature ?

A. Molality only

B. Molality and mole fraction

C. Molarity and mole fraction

D. Molality and normality.

Answer: B

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Multiple Choice Question Level Ii

1. Five thousand with three significant figures is written as:

A. 5000

B. 5.0×10^3

C. 5.00×10^3

D. 0.50 x 10^4`

Answer: C

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2. Express decimal equivalent of 1/60 to three significant figures.

A. 0.0167

B. 0.01666

C. 0.0166

D. 1.7×10^2

Answer: A

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3. The mass of a piece of paper is 0.02 g and the mass of a solid substance and the piece of paper is 20.036 g. If the volume of the solid is $2.16cm^3$, calculate its density to the proper number of significant digits.

A. $9.27gcm^{-3}$

B. $9.3gcm^{-3}$

C. $9.267gcm^{-3}$

D. $43.24gcm^{-3}$

Answer: A

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4. Two samples were weighed using different balances

(i) 3.529 g (ii) 0.40 g

How would the total weight of the sample be reported ?

A. 3.929 g

B. 3g

C. 3.9g

D. 3.93 g

Answer: D

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5. Which of the following is not a compound ?

A. petrol

B. honey

C. steam

D. air

Answer: C

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6. Which of the following statements is not correct?

A. One mole of carbon and 1/3 mole of carbon dioxide contain the same number of atoms.

B. One mole of NH_3 and one mole of BF_3 contain the same number of atoms.

C. One mole of CO_2 occupies more volume than one mole of CO at N.T.P

D. One mole of carbon is 6.02×10^{23} times heavier than an atom of carbon

Answer: C

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7. 1.0 g of an oxide of metal M contained 0.5 g of M and 4.0 g of another oxide of M contained 1.6 g of M. These data illustrate the

A. Law of reciprocal proportion

B. Law of conservation of mass

C. Law of constant proportion

D. Law of multiple proportion

Answer: D

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8. The molar masses of oxygen and sulphur dioxide are 32 and 64 respectively. If 1 L of oxygen at $25^{\circ}C$ and 750 mm Hg pressure contains N molecules, then the number of molecules in 2 L sulphur dioxide under the same conditions of temperature and pressure is :

A. N/2

B. 3N/2

C. 2N

D. 6N

Answer: C

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9. Which of the following has largest number of atoms?

A. 0.5 g atom of Cu

B. 0.635 g of Cu

C. 0.25 moles of Cu-atom

D. 1 g of Cu

Answer: A

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10. Which of the following has maximum number of molecules ?

A. 1 mole of H_2O gas

B. 32 g of CO

C. 2.24 L of N_2 at N.T.P.

D. 22 g ofCO_2

Answer: B

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11. Two flasks A and B of equal volume contain 2 g of H_2 and 2 g of N_2 respectively at the same temperature and pressure. The number of molecules in flask A is :

A. same as the number of molecules in flask B

B. half the number of molecules in flask B

C. 7 times the number of molecules in flask B

D. 14 times the number of molecules in flask B

Answer: D

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12. 2.24 L of N_2 at N.T.P. contain same number of molecules as are present in

A. 8.8 g of CO_2

B. 1.7 g of ammonia (NH_3)

C. 64 g of SO_2

D. 3.2 g of methane (CH_4)

Answer: B

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13. The number of water molecules present in a drop of water weighing 0.018g is

A. 6.02×10^{26}

B. 6.02×10^{23}

C. 6.02×10^{20}

D. 6.02×10^{19}

Answer: C

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14. The number of silver atoms present in a 90% pure silver wire weighing 10 g is :

A. 5.57×10^{22}

B. 0.62×10^{23}

C. 5.0×10^{22}

D. 6.2×10^{29}

Answer: C

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15. A given sample of $AlCl_3$ contains $6.02 \times 10^{20} Al^{3+}$ ions. The moles of Cl^{-1} ions are :

A. 1.0×10^{-3}

B. 3.0×10^{-3}

C. 3.0×10^{3}

D. 0.33×10^{-3}

Answer: B

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16. What weight of CO_2 will contain same number of oxygen atoms as are present in 3.6 g of water ?

A. 8.8 g

B. 7.2 g

C. 4.4 g

D. 220 g

Answer: C

Watch Video Solution

17. The number of atoms in 52 u of He is:

A. 3.1×10^{25}

B. 7.8×10^{23}

C. 13

D. 103

Answer: D

Watch Video Solution

18. If one atom of hydrogen weighs 1.65×10^{-24} g, then mass of one atom of carbon weighs

A. $1.98 \times 10^{-23} g$

B. $1.65 \times 10^{-24} g$

C. $1.37 \times 10^{-25} g$

D. $1.40 \times 10^{-23} g$

Answer: A

Watch Video Solution

19. The volume of one molecule of water is (density of water = $1gml^{-1}$) about

A. $3.0 \times 10^{-23}mL$

B. $6.02 \times 10^{23}mL$

C. $1.0 \times 10^{-24}mL$

D. 1mL

Answer: A

Watch Video Solution

20. One mole of hydrogen peroxide (H_2O_2) has a mass same as that of

A. 0.1 mol of sucrose $(C_{12}H_{22}O_{11})$

B. 2.0 mol of ammonia

C. 11.2 L of SO_2 at N.T.P.

D. 0.1 mol of SO_3

Answer: B

Watch Video Solution

21. 19.7 kg of gold was recovered from a smuggler. How many atoms of gold were recovered ? (Au = 197).

A. 100

B. 6.02×10^{23}

C. 6.02×10^{24}

D. 6.02×10^{25}

Answer: D

Watch Video Solution

22. A gaseous mixture contains oxygen and nitrogen in the ratio of 1:4 by weight. Therefore, the ratio of their number of molecules is

A. $1:4$

B. $1:8$

C. $7:32$

D. $3:16$

Answer: C

Watch Video Solution

23. 0.5 mol of $BaCl_2$ is mixed with 0.2 mol of Na_3PO_4 . The maximum number of mol of $Ba_3(PO_4)_2$ that can be formed is :

A. 0.7

B. 0.5

C. 0.3

D. 0.1

Answer: D

Watch Video Solution

24. 4.0 grams of caustic soda contain

A. 6.02×10^{23} atoms of H

B. 4 gram atoms of Na

C. 6.02×10^{22} atoms of Na

D. 4 moles of NaOH

Answer: C

Watch Video Solution

25. One litre of a gas at S.T.P. weighs 1.16 g. It can possibly be

A. C_2H_2

B. CO

C. O_2

D. CH_4

Answer: A

Watch Video Solution

26. 12 g of magnesium (atomic mass 24) on reacting completely with acid gives hydrogen gas, the volume of which at N.T.P. would be

A. 22.4 L

B. 11.2 L

C. 44.8 L

D. 6.1 L

Answer: B

Watch Video Solution

27. If 224 ml of a triatomic gas has a mass of 1 g at N.T.P., then the mass of one atom is :

A. $9.3 \times 10^{-23} g$

B. $2.08 \times 10^{-23} g$

C. $5.53 \times 10^{-23} g$

D. $9.62 \times 10^{-23} g$

Answer: C

Watch Video Solution

28. In the final answer of the expression $\frac{(29.2 - 20.2)(1.79 \times 10^5)}{1.37}$ the number of significant figures is :

A. 1

B. 2

C. 3

D. 4

Answer: B

Watch Video Solution

29. If 20.0 g of $CaCO_3$ is treated with 200 g of HCI, how many grams of CO_2 can be obtained according to the following reaction :

$$CaCO_3(s) + 2HCl(aq) \rightarrow CaCl_2(aq) + H_2O(l) + CO_2(g)$$

A. 8.80 g

B. 27.4 g

C. 4.20 g

D. 13.7 g

Answer: A

Watch Video Solution

30. The thickness of Milky way Galaxy is 40 Em. It can be expressed in metres as

A. $4.0 \times 10^{19} m$

B. $4.0 \times 10^{15} m$

C. $4.0 \times 10^{18} m$

D. $4.0 \times 10^{12} m$

Answer: A

Watch Video Solution

31. The mass of an Al block (in grams) whose dimensions are 2.0 inch x 3.0 inch x 4.0 inch having density $2.78 gcm^{-3}$ is

A. 64.8 g

B. 8.9 g

C. $1.1 \times 10^3 g$

D. $1.1 \times 10^5 g$

Answer: C

Watch Video Solution

32. The volume of SO_2 produced at S.T.P. by the combustion of 50 g of sulphur containing 4% sand by weight will be

A. 33.6 L

B. 22.4L

C. 11.2 L

D. 44.8 L

Answer: A

Watch Video Solution

33. What is the number of potassium atoms required to prepare 1 equivalent of $KMnO_4$?

A. 6.02×10^{23}

B. 3.01×10^{24}

C. 1.204×10^{23}

D. 1

Answer: C

Watch Video Solution

34. The total number of valence electrons in 4.2 g of N_3^- ions is (N_A is the Avogadro number):

A. $1.6N_A$

B. $3.2N_A$

C. $2.1N_A$

D. $4.2N_A$

Answer: A

Watch Video Solution

35. If 22.4 ml of a triatomic gas has a mass of 0.048 g at 273K and 1 atm pressure, then the mass of one atom is:

A. $7.9 \times 10^{-23} g$

B. $2.6 \times 10^{-23} g$

C. $2.4 \times 10^{-22} g$

D. $2.4 \times 10^{-23} g$

Answer: B

Watch Video Solution

36. Two elements A (at. mass 16) and B (at. mass 14) combine to form compounds X, Y and Z. The ratio of different masses of B which combine with a fixed mass of A in X, Y and Z is 1:3:5. If 32 parts by mass of A combine with 84 parts by mass of B in X, then in Z, 16 parts by mass of A will combine with

A. 14 parts by mass of B

B. 42 parts by mass of B

C. 70 parts by mass of B

D. 84 parts by mass of B

Answer: C

Watch Video Solution

37. One litre of an unknown gas weighs 1.25 g at NTP. The possible formula of the gas is :

A. N_2

B. CO

C. SO_2

D. O_2

Answer: B

Watch Video Solution

38. A metal M forms an alum which contains the element potassium and is isomorphous with ordinary alum $\left(K_2SO_4.\ Al_2(SO_4)_3 24H_2O\right)$. If the alum of M contains 10.42% of M, then atomic weight of M is (at. mass of K= 39, O=16, S=32 and H=1):

A. 52

B. 104

C. 156

D. 208

Answer: A

Watch Video Solution

39. Iron has density of $7.86 g cm^{-3}$ and an atomic mass of 55.85 u. The volume occupied by 1 mol of Fe is

A. $22.8 cm^3 \text{mol}^{-1}$

B. $7.11 cm^3 \text{mol}^{-1}$

C. $3.64 \times 10^{24} cm^3 \text{mol}^{-1}$

D. $5.26 cm^3 \text{mol}^{-1}$

Answer: B

Watch Video Solution

40. A certain compound has the molecular formula M_4O_6 . If 10.0 g of the compound contains 5.62 g of M, then the atomic mass of M is

A. 62.0 u

B. 6.8 u

C. 30.8 u

D. 42 u

Answer: C

Watch Video Solution

41. x L of nitrogen at N.T.P. contains 3.0×10^{22} molecules. The number of molecules in $\frac{x}{2}$ ozone at N.T.P. will be

A. 3.0×10^{22}

B. 1.5×10^{22}

C. 1.5×10^{21}

D. 1.5×10^{20}

Answer: B

Watch Video Solution

42. C-12 and C-14 isotopes are found as 98% and 2% respectively in any sample. Number of atoms of C-14 in 12

g of sample will be

A. 1.5 mole atoms

B. 1.03×10^{22} atoms

C. 3.06×10^{22} atoms

D. 3.08×10^{23} atoms

Answer: B

Watch Video Solution

43. 142 g of chlorine represents

A. 4 mol of chlorine atoms

B. 2 g mol of chlorine

C. 2 mol of Cl atoms

D. both A and B

Answer: D

44. 15% of oxygen is converted to ozone. The mass of ozone that can be prepared from 67.2 L of oxygen at N.T.P. will be

A. 14.4 g

B. 28.8 g

C. 52.0 g

D. 64 g

Answer: A

Watch Video Solution

45. Express $4.2Lh^{-2}$ to mLs^{-2}

A. $4.2 \times 10^{-3} mLs^{-2}$

B. $3.2 \times 10^{-4} mLs^{-2}$

C. $3.8 \times 10^{-4} mLs^{-2}$

D. $4.6 \times 10^{-4} mLs^{-2}$

Answer: B

Watch Video Solution

46. Mass of human DNA molecule is 1 fg. It may be expressed in kilogram as :

A. $1 \times 10^{-12} kg$

B. $1 \times 10^{-15} kg$

C. $1 \times 10^{-18} kg$

D. $1.8 \times 10^{-9} kg$

Answer: C

Watch Video Solution

47. Moles of $KMnO_4$ required to oxidise Imol of FeC_2O_4 in acidic medium is :

A. 0.6

B. 1.67

C. 0.2

D. 0.4

Answer: C

Watch Video Solution

48. The maximum amount of $BaSO_4$ precipitated on mixing $BaCl_2$ (aq. 0.5M) and H_2SO_4 (aq. 1M) will

correspond to:

A. 1.0M

B. 0.5 M

C. 0.25 M

D. 1.5 M

Answer: B

Watch Video Solution

49. Haemoglobin contains 0.33% of iron by weight. The molecular mass of haemoglobin is about 67200. The number of iron atoms (at. mass of Fe=56) present in one molecule of haemoglobin is:

A. 6

B. 4

C. 2

D. 1

Answer: B

Watch Video Solution

50. The weight of a molecule of a compound $C_{60}H_{122}$ is :

A. $1.4 \times 10^{-21} g$

B. $1.09 \times 10^{-21} g$

C. $5.025 \times 10^{23} g$

D. $16.023 \times 10^{23} g$

Answer: A

Watch Video Solution

51. What will be the volume of the mixture after the reaction :

$$NH_3(g)(1L) + HCl(g)(1.5L) \rightarrow NH_4Cl(s)$$

A. 1.5 L

B. 0.5 L

C. 1L

D. 0L

Answer: B

Watch Video Solution

52. A compound has haemoglobin-like structure. It has one Fe atom. It contains 4.6% of Fe. The approximate molecular mass is

A. $100 g \text{mol}^{-1}$

B. $1200 g \text{mol}^{-1}$

C. $1400 g \text{mol}^{-1}$

D. $1600 g \text{mol}^{-1}$

Answer: B

Watch Video Solution

Watch Video Solution

53. Assuming fully decomposed, the volume of CO_2 released at N.T.P. on heating 9.85 g of $BaCO_3$ (atomic mass of Ba = 137) will be

A. 0.84 L

B. 2.24 L

C. 4.06 L

D. 1.12 L

Answer: D

Watch Video Solution

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

A. $A_3(BC_4)_2$

B. $A_3(B_4C)_2$

C. ABC_2

D. $A_2(BC_3)_2$

Answer: A

Watch Video Solution

55. Common salt obtained from sea water contains 95% NaCl by mass. The approximate number of molecules present in 10g of the salt is

A. 10^{21}

B. 10^{22}

C. 10^{23}

D. 10^{24}

Answer: C

Watch Video Solution

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

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

B. 0.60 L of 10 N HCl and 0.40 L of 4 N HCl

C. 0.80 L of 10 N HCl and 0.20 L of 4 N HCl

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

Answer: A

Watch Video Solution

57. 20 mL of 10 N HCl are mixed with 10 mL of 36 N HCl and the mixture is made 1L. Normality of the mixture will be

A. 0.56 N

B. 0.50 N

C. 0.40 N

D. 0.35 N

Answer: A

58. Excess of carbon dioxide is passed through 50 mL of 0.5 M calcium hydroxide solution. After the completion of the reaction, the solution was evaporated to dryness. The solid calcium carbonate was completely neutralised with

0.1 N hydrochloric acid. The volume of hydrochloric acid required is

A. $200cm^3$

B. $500cm^3$

C. $400cm^3$

D. $300cm^3$

Answer: B

Watch Video Solution

59. 10 g of hydrogen and 64g of oxygen were filled in a steel vessel and exploded. Amount of water produced in this reaction will be

A. 3 mol

B. 4 mol

C. 1 mol

D. 2 mol.

Answer: B

Watch Video Solution

60. If the mass of 1 mole of water containing x % of heavy water is 19 g then the value of 'x is

A. 0.3

B. 0.5

C. 0.75

D. 0.62

Answer: B

Watch Video Solution

61. A compound contains 8% sulphur. The minimum molecular weight of the compound is

A. 100

B. 200

C. 350

D. 400

Answer: D

Watch Video Solution

62. One mole of calcium phosphide on reaction with excess of water gives

A. One mole of phosphine

B. Two moles of phosphoric acid

C. Two moles of phosphine

D. One mole of phosphorus pentoxide

Answer: C

Watch Video Solution

63. A gaseous mixture contain 50% He and 50% CH_4 by volume. What is the percent by weight of CH_4 in the mixture ?

A. 0.1997

B. 0.2005

C. 0.5

D. 0.75

Answer: D

Watch Video Solution

64. The mass of carbon anode consumed (giving only carbon dioxide) in the production of 270 kg of aluminium metal from bauxite by Hall process is:

A. 180 kg

B. 270 kg

C. 540 kg

D. 90 kg

Answer: D

Watch Video Solution

65. If 30 ml of H_2 and 20 ml of O_2 react to form water, what is left at the end of the reaction ?

A. 10 ml of H_2

B. 5 ml of H_2

C. 10 ml of O_2

D. 5 ml of O_2

Answer: D

Watch Video Solution

66. An alkaloid contains 17-28% of nitrogen and its molecular mass is 162. The number of nitrogen atoms

present in one molecule of alkaloid is :

A. five

B. four

C. three

D. two

Answer: D

Watch Video Solution

67. For the formation of 3.65 g of hydrogen chloride gas, what volumes of hydrogen and chlorine gas are required at N.T.P conditions ?

A. 1.12 L, 1.12 L

B. 1.12 L, 2.24 L

C. 3.65 L, 1.83 L

D. 1 L, 1 L.

Answer: A

Watch Video Solution

68. How many moles of lead (II) chloride will be formed from a reaction between 6.5 g of PbO and 32 g of HCI ?

A. 0.044

B. 0.033

C. 0.011

D. 0.029

Answer: D

Watch Video Solution

69. Volume occupied by one molecule of water (density $= 1gcm^{-3}$) is :

A. $9.0 \times 10^{-23} cm^3$

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

C. $3.0 \times 10^{-23} cm^3$

D. $5.5 \times 10^{-23} cm^3$

Answer: C

Watch Video Solution

70. What volume of oxygen gas (O_2) measured at $0^\circ C$ and 1 atm is needed to burn completely 1L of propane gas (C_3H_8) measured under the same conditions ?

A. 7L

B. 6L

C. 5L

D. 10L

Answer: C

Watch Video Solution

Watch Video Solution

71. If 1.5 moles of oxygen combine with Al to form Al_2O_3 , the mass of Al in g (Atomic mass of Al = 27] used in the reaction is

A. 2.7

B. 54

C. 40.5

D. 81

Answer: B

Watch Video Solution

72. For a reaction $A + 2B \rightarrow C$, the amount of C formed by starting the reaction with 5 moles of A and 8 moles of B is

A. 5 moles

B. 8 moles

C. 16 moles

D. 4 moles

Answer: D

Watch Video Solution

73. A sample of phosphorus trichloride (PCl_3) contains 1.4 moles of the substance. How many atoms are there in the sample ?

A. 4

B. 5.6

C. 8.431×10^{23}

D. 3.372×10^{24}

Answer: D

Watch Video Solution

74. 4 g of copper was dissolved in concentrated nitric acid. The copper nitrate on strong heating gave 5 g of its oxide. The equivalent weight of copper is

A. 23

B. 32

C. 12

D. 20

Answer: B

Watch Video Solution

75. The crystalline salt $Na_2SO_4.xH_2O$ on heating loses 55.9 % of its weight. The formula of crystalline salt is

A. $Na_2SO_4.5H_2O$

B. $Na_2SO_4.7H_2O$

C. $Na_2SO_4.2H_2O$

D. $Na_2SO_4.10H_2O$

Answer: D

Watch Video Solution

76. What is the molality of pure water

A. 1

B. 18

C. 55.5

D. none of these

Answer: C

Watch Video Solution

77. The molarity of 98% H_2SO_4 (d = 1.8 g/mL) by weight is

A. 6M

B. 18M

C. 10M

D. 4M

Answer: B

 Watch Video Solution

78. How much time (in hours) would it take to distribute one avogardo number of wheat grains if 10^{20} grains are distributed each second ?

A. 0.1673

B. 1.673

C. 16.73

D. 167.3

Answer: B

Watch Video Solution

79. 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. II lt I lt III lt IV

B. I lt II lt III lt IV

C. III lt II lt IV lt I

D. IV lt II lt III lt I

Answer: A

Watch Video Solution

80. Which one of the following sets of compounds correctly illustrate the law of reciprocal proportions ?

A. P_2O_3, PH_3, H_2O

B. P_2O_5, PH_3, H_2O

C. N_2O_5, NH_3, H_2O

D. N_2O, NH_3, H_2O

Answer: A

Watch Video Solution

81. 20.0 kg of $N_2(g)$ and 3.0 kg of $H_2(g)$ are mixed to produce $NH_3(g)$. The amount of NH_3 (g) formed is

A. 17 g

B. 34 g

C. 20 g

D. 3 kg

Answer: A

Watch Video Solution

82. Mole fraction of the solute in a 1.00 molal aqueous solution is

A. 0.1770

B. 0.0177

C. 0.0344

D. 1.7700

Answer: B

Watch Video Solution

83. What is the volume of CO_2 liberated (in litres) at 1 atmosphere and $0^\circ C$ when 10 g of 100% pure calcium

carbonate is treated with excess dilute sulphuric acid ? (Atomic mass Ca = 40, C = 12, O = 16)

A. 0.224

B. 2.24

C. 22.4

D. 224

Answer: B

Watch Video Solution

84. A 100% pure sample of a divalent metal carbonate weighing 2 g on complete thermal decomposition

releases 448 cc of carbon dioxide at STP. The equivalent mass of the metal is

A. 40

B. 20

C. 28

D. 12

Answer: B

 Watch Video Solution

85. The equivalent mass of a certain bivalent metal is 20 . The molecular mass of its anhydrous chloride is

A. 91

B. 111

C. 55.5

D. 75.5

Answer: B

Watch Video Solution

86. The total number of electrons in 18 mL of water (density = 1 g mL^{-1}) is

A. 6.02×10^{23}

B. 6.02×10^{25}

C. 6.02×10^{24}

D. $6.02 \times 18 \times 10^{23}$

Answer: C

Watch Video Solution

87. Two solutions of HCI, A and B, have concentrations of 0.5 N and 0.1 M respectively. The volume of solutions A and B required to make 2 litres of 0.2 N HCl are

A. 0.5 L of A + 1.5 L of B

B. 1.5 L of A + 0.5 L of B

C. 1.0 L of A + 1.0 L of B

D. 0.75 L of A + 1.25 L of B

Answer: A

Watch Video Solution

88. Avogadro number $\left(6.022 \times 10^{23}\right)$ of carbon atoms are present in

A. 12 grams of $^{12}CO_2$

B. 22.4 litre $^{12}CO_2$ at room temperature

C. 44 grams of $^{12}CO_2$

D. 12 moles of $^{12}CO_2$

Answer: C

Watch Video Solution

89. The volume of 0.1 M $Ca(OH)_2$ required to neutralize 10 mL of 0.1 N HCI

A. 10 mL

B. 20 mL

C. 5mL

D. 15mL

Answer: C

Watch Video Solution

90. An aqueous solution of 6.3 g of oxalic acid dihydrate is made upto 250 mL. The volume of 0.1 N NaOH required to completely neutralize 10 mL of this solution is

A. 40mL

B. 20mL

C. 10mL

D. 5mL

Answer: A

Watch Video Solution

91. How many moles of electrons weigh one kilogram?

A. 6.023×10^{23}

B. $\frac{1}{9.108} \times 10^{31}$

C. $\frac{6.023}{9.108} \times 10^{54}$

D. $\frac{1}{9.108 \times 6.023} \times 10^{6}$

Answer: D

Watch Video Solution

92. Mixture X = 0.02 mol of $\left[Co(NH_3)_5SO_4\right]$ Br Brand 0.02 mol of $\left[Co(NH_2)_5Br\right]SO_4$ was prepared in 2L of solution.

1 L of mixture X + excess of $AgNO_3 \rightarrow Y$

1 L of mixture X + excess of $BaCl_2 \rightarrow Z$

Number of moles of Y and Z are :

A. 0.01 , 0.01

B. 0.02 , 0.01

C. 0.01 , 0.02

D. 0.02 , 0.02

Answer: A

Watch Video Solution

93. Which has maximum number of atoms?

A. 24g of C (12)

B. 56g of Fe (56)

C. 27g of Al (27)

D. 108g of Ag (108)

Answer: A

Watch Video Solution

94. Number of atoms in 588.6 g Fe (atomic mass of Fe = 55.86 g mol^{-1}) is

A. twice that in 60 g carbon

B. 6.023×10^{22}

C. half that of 8g He

D. $558.6 \times 6.023 \times 10^{23}$

Answer: A

Watch Video Solution

95. What volume of hydrogen gas at 273K and 1 atm pressure will be consumed in obtaining 21.6 g of elemental boron (atomic mass = 10.8) from the reduction of boron trichloride by hydrogen ?

A. 67.2 L

B. 44.8 L

C. 22.4L

D. 89.6 L

Answer: A

Watch Video Solution

96. 6.02×10^{20} molecules of urea are present in 100 ml of its solution. The concentration of solution is

A. 0.02 M

B. 0.01 M

C. 0.001 M

D. 0.1 M

Answer: B

Watch Video Solution

97. One mole of magnesium nitride on reaction with excess of water gives

A. two moles of ammonia

B. one mole of nitric acid

C. one mole of ammonia

D. two moles of nitric acid

Answer: A

Watch Video Solution

98. If we consider that 1/6 in place of 1/12, mass of carbon atom is taken to be the relative atomic mass unit, the

mass of one mole of a substance will

A. decrease twice

B. increase two fold

C. remain unchanged

D. be a function of the molecular mass of the substance

Answer: D

Watch Video Solution

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

A. 3.125×10^{-2}

B. 1.25×10^{-2}

C. 2.5×10^{-2}

D. 0.02

Answer: A

Watch Video Solution

100. In the reaction :

$$2Al(s) + 6HCl(aq) \rightarrow 2Al^{3+}(aq) + 6Cl^{-}(aq) + 3H_2O(g)$$

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

B. 67.2 L H_2 (g) at STP is produced for every mole Al that reacts.

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

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

Answer: C

Watch Video Solution

Multiple Choice Question Level Iii

1. Given that the abundances of isotopes ^{54}Fe, ^{56}Fe and ^{57}Fe are 5%, 90% and 5% respectively, the atomic mass of Fe is

A. 55.85

B. 55.95

C. 55.75

D. 56.05

Answer: B

Watch Video Solution

2. The mass of potassium dichromate crystals required to oxidise $750cm^3$ of 0.6 M Mohr's salt solution is: (Given molar mass : potassium dichromate = 294, Mohr's salt = 392)

A. 0.45 g

B. 22.05 g

C. 2.2 g

D. 0.49 g

Answer: B

Watch Video Solution

3. The molarity of a solution obtained by mixing 750 mL of 0.5 (M) HCl with 250 mL of 2(M) HCI will be:

A. 0.875 M

B. 1.00 M

C. 1.75 M

D. 0.975 M

Answer: A

Watch Video Solution

4. A gaseous mixture contains oxygen and nitrogen in the ratio of 1:4 by weight. Therefore, the ratio of their number

of molecules is

A. $1:4$

B. $7:32$

C. $1:8$

D. $3:16$

Answer: B

Watch Video Solution

5. The molecular formula of a commercial resin used for exchanging ions in water softening is $C_8H_7SO_3Na$ (Mol. Wt. 206). What would be the maximum uptake ofCa^{2+} ions by the resin when expressed in mole per gram resin ?

A. $\frac{1}{103}$

B. $\frac{1}{206}$

C. $\frac{2}{309}$

D. $\frac{1}{412}$

Answer: D

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Recent Examination Question

1. 80 g of oxygen contains as many atoms as in

A. 10 g of hydrogen

B. 5 g of hydrogen

C. 80 g of hydrogen

D. 1 g of hydrogen.

Answer: B

2. Excess of carbon dioxide is passed through 50 mL of 0.5 M calcium hydroxide solution. After the completion of the reaction, the solution was evaporated to dryness. The solid calcium carbonate was completely neutralised with 0.1 N hydrochloric acid. The volume of hydrochloric acid required is

A. $200CM^3$

B. $500cm^3$

C. $400cm^3$

D. $300cm^3$

Answer: B

Watch Video Solution

3. $50cm^3$ of 0.2N HCl is titrated against 0.1N NaOH solution. The titration is discontinued after adding $50cm^3$ of NaOH. The remaining titration is completed by adding 0.5N KOH. The volume of KOH required for completing the titration is :

A. $12cm^3$

B. $10cm^3$

C. $25cm^3$

D. $10.5cm^3$

Answer: B

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4. A mixture of $CaCl_2$ and NaCl weighing 4.44g is treated with sodium carbonate solution to precipitate all the calcium ions as calcium carbonate. The calcium carbonate so obtained is heated strongly to get 0.56g of CaO. The

percentage of NaCl in the mixture is [Atomic mass of Ca = 40]

A. 31.5

B. 75

C. 25

D. 40.2

Answer: B

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5. The equivalent mass of a certain bivalent metal is 20 . The molecular mass of its anhydrous chloride is

A. 91

B. 111

C. 55.5

D. 75.5

Answer: B

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6. The total number of electrons in 18 mL of water (density = 1 g mL^{-1}) is

A. 6.02×10^{23}

B. 6.02×10^{25}

C. 6.02×10^{24}

D. $6.02 \times 18 \times 10^{23}$

Answer: C

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7. The volume of 0.1 M oxalic acid that can be completely oxidized by 20 mL of 0.025 M $KMnO_4$ solution is

A. 125mL

B. 25mL

C. 12.5mL

D. 37.5 mL

Answer: C

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8. The number of water molecules present in a drop of water weighing 0.18g is :

A. 6.022×10^{26}

B. 6.022×10^{23}

C. 6.022×10^{19}

D. 6.022×10^{21}

Answer: D

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9. Empricial formula of a compound is CH_2O and its molecular mass is 90, the molecular formula of the compound is

A. $C_3H_6O_3$

B. $C_2H_4O_2$

C. $C_6H_{12}O_6$

D. CH_2O

Answer: A

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10. The mass of $112cm^3$ of NH_3 gas at STP is

A. 0.085 g

B. 0.850 g

C. 8.500 g

D. 80.500 g

Answer: A

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11. 10 g of a mixture of BaO and CaO requires $100cm^3$ of 2.5 M HCl to react completely. The percentage of calcium oxide in the mixture is approximately (Given : molar mass of BaO= 153)

A. 52.6

B. 55.1

C. 44.9

D. 47.4

Answer: A

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12. $25cm^3$ of oxalic acid completely neutralised 0.064 g of sodium hydroxide. Molarity of the oxalic acid solution is

A. 0.064

B. 0.045

C. 0.015

D. 0.032

Answer: D

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13. What amount of dioxygen (in gram) contains 1.8×10^{22} molecules ?

A. 9.60

B. 0.0960

C. 96.0

D. 0.960

Answer: D

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14. 20 ml of acetic acid reacts with 20 ml of ethyl alcohol to form ethyl acetate. The density of acid and alcohol are 1 g/ml and 0.7 g/ml respectively. The limiting reagent in this reaction is :

A. Acetic acid

B. Ethyl alcohol

C. Acetic acid and ethyl alcohol

D. Ester.

Answer: B

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15. The mass of oxygen gas which occupies 5.6 litres at STP would be

A. The gram atomic mass of oxygen

B. One fourth of the gram atomic mass of oxygen

C. Double the gram atomic mass of oxygen

D. Half of the gram atomic mass of oxygen.

Answer: D

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