1)

Which one of the following pairs 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 22 g of CO_2

C)
28 g of N_2 and 22 g of CO_2

D)
32 g of O_2 and 32 g of N_2

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2)

Number of gm of oxygen in 32.2 g $Na_2SO_4.10H_2O$ is [Haryana PMT 2000]

A)
20.8

B)
22.4

C)
2.24

D)
2.08

3)

250 ml of a sodium carbonate solution contains 2.65 grams of Na_2CO_3. If 10 ml of this solution is diluted to one litre, what is the concentration of the resultant solution (mol. wt. of Na_2CO_3=106)   [EAMCET 2001]

A)
○   0.1 M

B)
○   0.001 M

C)
○   0.01 M

D)
○ 10^{-4} M

4)

A molar solution is one that contains one mole of a solute in [IIT 1986]

A)
○   1000 g of the solvent

B)
○   One litre of the solvent

C)
○   One litre of the solution

D)
○   22.4 litres of the solution

5)

The number of oxygen atoms in 4.4 g of CO_2 is approx. [CBSE PMT 1990]

A) ○ 1.2×10^{23}

B) ○ 6×10^{22}

C) ○ 6×10^{23}

D) ○ 12×10^{23}

6)

The volume occupied by 4.4 g of CO_2 at STP is [AFMC 1997, 2004; Pb. CET 1997, 2002]

A) ○   22.4 L

B) ○   2.24 L

C) ○   0.224 L

D) ○   0.1 L

7)

The number of water molecules present in a drop of water (volume 0.0018 ml) at room temperature is [DCE 2000]

A)
○ 6.023×10^{19}

B)
○ 1.084×10^{18}

C)
○ 4.84×10^{17}

D)
○ 6.023×10^{23}

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8)

One mole of calcium phosphide on reaction with excess of water gives   [IIT 1999]

A)
○   One mole of phosphine

B)
○   Two moles of phosphoric acid

C)
○   Two moles of phosphine

D)
○   One mole of phosphorus pentoxide

9)

19.7 kg of gold was recovered from a smuggler. How many atoms of gold were recovered (Au =197) [Pb. CET 1985]

A)
○   100

B)
○ 6.02×10^{23}

C)
○ 6.02×10^{24}

D)
○ 6.02×10^{25}

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10)

The total number of protons in 10 g of calcium carbonate is ($N_0 = 6.023 \times 10^{23}$)

A)
○ 1.5057×10^{24}

B)
○ 2.0478×10^{24}

C)
○ 3.0115×10^{24}

D)
○ 4.0956×10^{24}

11)

The number of molecules in 16 g of methane is

A) 3.0×10^{23}

B) 6.02×10^{23}

C) $\dfrac{16}{6.02} \times 10^{23}$

D) $\dfrac{16}{3.0} \times 10^{23}$

12)

Number of molecules in 100 ml of each of O_2, NH_3 and CO_2 at STP are   [Bihar MADT 1985]

A) In the order $CO_2 < O_2 < NH_3$

B) In the order $NH_3 < O_2 < CO_2$

C) The same

D) $NH_3 = CO_2 < O_2$

13)

The molecular weight of hydrogen peroxide is 34. What is the unit of molecular weight   [MP PMT 1986]

A)
○ g

B)
○ mol

C)
○ $g\,mol^{-1}$

D)
○ $mol\,g^{-1}$

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14)

The number of water molecules in 1 litre of water is [EAMCET 1990]

A)
○   18

B)
○ 18×1000

C)
○ N_A

D)
○ $55.55\,N_A$

15)

The number of electrons in a mole of hydrogen molecule is   [CPMT 1987]

A)
○ 6.02×10^{23}

B)
○ 12.046×10^{23}

C)
○ 3.0115×10^{23}

D)
○   Indefinite

Vie

16)

The numbers of moles of $BaCO_3$ which contain 1.5 moles of oxygen atoms is   [EAMCET 1991]

A)
○   I   0.5

B)
○   1

C)
○   3

D)
○ 6.02×10^{23}

17)

Which of the following is Loschmidt number

A)
6×10^{23}

B)
2.69×10^{19}

C)
3×10^{23}

D)
None of these

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18)

How many molecules are present in one gram of hydrogen [AIIMS 1982]

A)
6.02×10^{23}

B)
3.01×10^{23}

C)
2.5×10^{23}

D)
1.5×10^{23}