MASSACHUSETTS CHEMISTRY · UNIT 3 · 25 QUESTIONS

Stoichiometry and Solutions — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **One mole is an amount containing**

- A one gram of a substance
- B the Avogadro number of particles
- C one liter of a substance
- D one atom of a substance

Understand It with Pulse | Flag a mistake

2 **Using whole number atomic masses (H = 1, O = 16), the molar mass of water, in grams per mole, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **The number of moles in 36 g of water is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **The Avogadro number is approximately**

- **A** 6.02×10^{23}
- **B** 3.01×10^{23}
- **C** 1.20×10^{24}
- **D** 6.02×10^{22}

Understand It with Pulse | Flag a mistake

5 **The mass, in grams, of 2 mol of carbon dioxide is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

6 **Molarity is defined as moles of solute per**

A gram of solution

B liter of solvent

C liter of solution

D mole of solvent

Understand It with Pulse | Flag a mistake

7 **The molarity, in moles per liter, of a solution containing 1 mol of solute in 2 L is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

8 **The number of moles in 20 g of sodium hydroxide is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **In a chemical reaction, the reactant that runs out first is the**

- **A** excess reactant
- **B** catalyst
- **C** product
- **D** limiting reactant

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10 **In the reaction $2H_2 + O_2 \rightarrow 2H_2O$, the moles of water formed from 4 mol of hydrogen with excess oxygen is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

11 **In the reaction $N_2 + 3H_2 \rightarrow 2NH_3$, the moles of ammonia formed from 3 mol of hydrogen with excess nitrogen is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

12 **Which solution is more concentrated**

A more solute in the same volume of solution

B less solute in the same volume of solution

C more solvent with the same solute

D the same solute in more water

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13 **The mass, in grams, of 3 mol of water is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

14 **The molarity, in moles per liter, of a solution containing 2 mol of solute in 0.5 L is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

15 **Percent yield is calculated as**

A theoretical yield ÷ actual yield, × 100

B actual yield ÷ theoretical yield, × 100

C actual yield + theoretical yield

D theoretical yield - actual yield

Understand It with Pulse | Flag a mistake

16 **The percent by mass of oxygen in carbon dioxide, to one decimal place, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

17 **A 100 mL sample of 2.0 M solution is diluted to 400 mL. The new molarity, in moles per liter, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

18 **An empirical formula gives the**

A exact number of atoms in a molecule

B mass of one mole

C simplest whole number ratio of atoms

D shape of a molecule

Understand It with Pulse | Flag a mistake

19 **A compound contains 12 g of carbon (1 mol) and 2 g of hydrogen (2 mol). The number of hydrogen atoms per carbon atom in its empirical formula is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

20 **In salt water, the salt is the**

- A solute
- B solvent
- C solution
- D precipitate

Understand It with Pulse | Flag a mistake

21 **At standard temperature and pressure, the volume, in liters, of 1 mol of hydrogen gas is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

22 **In the reaction $2Mg + O_2 \rightarrow 2MgO$,**
the mass, in grams, of magnesium oxide formed from 2 mol of magnesium is ____

ANSWER _____

Understand It with Pulse | Flag a mistake

23 **A saturated solution at a given temperature**

- A contains no solute
- B can dissolve unlimited solute
- C contains only solvent
- D cannot dissolve more solute at that temperature

Understand It with Pulse | Flag a mistake

24 **The number of moles in 90 g of glucose, $C_6H_{12}O_6$, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

25 **In the reaction $2H_2 + O_2 \rightarrow 2H_2O$,**
with 4 mol of hydrogen and 1 mol of oxygen, the moles of water formed is ____

ANSWER _____

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	B	**10.**	4	**19.**	2
2.	18	**11.**	2	**20.**	A
3.	2	**12.**	A	**21.**	22.4
4.	A	**13.**	54	**22.**	80
5.	88	**14.**	4	**23.**	D
6.	C	**15.**	B	**24.**	0.5
7.	0.5	**16.**	72.7	**25.**	2
8.	0.5	**17.**	0.5		
9.	D	**18.**	C		

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