CHEMISTRY · ARKANSAS

Chemistry
Practice Test

Unit 3: Stoichiometry and Solutions

25 Questions

Original practice test based on the Arkansas curriculum. Work through each question, then check your answers at the end.

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.

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Question 1

One mole of any substance contains Avogadro number of particles, about

A) 6.02×10^{23}

B) 6.02×10^{12}

C) 1.00×10^{23}

D) 3.00×10^{8}

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Question 2

Molar mass is the mass of one mole of a substance, expressed in

A) Moles per gram

B) Grams per mole

C) Litres per mole

D) Grams only

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Question 3

The molar mass of water H_2O is about 18 grams per mole because hydrogen is about 1 and oxygen is about 16, so 2 plus 16 equals

A) 17

B) 20

C) 18

D) 34

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Question 4

To find moles from mass, divide mass by

A) Volume

B) Density

C) Temperature

D) Molar mass

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Question 5

To find mass from moles, multiply moles by

A) Molar mass

B) Avogadro number

C) Volume

D) Pressure

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Question 6

A solution concentration in moles per litre is called

A) Molality only

B) Molarity

C) Percent only

D) Density

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Question 7

Molarity is calculated as moles of solute divided by

A) Grams of solvent

B) Moles of solvent

C) Litres of solution

D) Litres of solute only

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Question 8

Diluting a solution by adding solvent decreases its

A) Number of moles of solute

B) Molar mass

C) Volume only

D) Concentration

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Question 9

In a chemical reaction, the limiting reactant is the reactant that

A) Runs out first and limits product formed

B) Is present in excess

C) Is a catalyst

D) Never reacts

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Question 10

The excess reactant is the reactant that remains after the reaction because it was present in

A) Less than required

B) More than the required amount

C) Exactly zero amount

D) A catalyst amount

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Question 11

Theoretical yield is the maximum product calculated from the balanced equation, while actual yield is the amount

A) Calculated only

B) Always larger

C) Actually obtained in an experiment

D) Never measured

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Question 12

Percent yield is actual yield divided by theoretical yield multiplied by

A) 10

B) 1000

C) 1

D) 100

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Question 13

Stoichiometry uses coefficients from a balanced equation as ratios of

A) Moles

B) Grams always

C) Litres always

D) Atoms of hydrogen only

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Question 14

A balanced equation 2 H_2 plus O_2 gives 2 H_2O shows that 2 moles of H_2 react with 1 mole of O_2 to make

A) 1 mole of H_2O

B) 2 moles of H_2O

C) 4 moles of H_2O

D) 2 moles of O_2

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Question 15

What does a molecular formula give that an empirical formula does not?

A) The mass only

B) The charge only

C) The actual number of atoms in a molecule

D) The shape only

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Question 16

A compound with empirical formula CH_2 and molar mass about 42 grams per mole has molecular formula

A) CH_2

B) C_2H_4

C) C_4H_8

D) C_3H_6

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Question 17

Percent composition is the mass of each element divided by the total mass of the compound multiplied by

A) 100

B) 10

C) 1000

D) Molar mass

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Question 18

A solution is a homogeneous mixture where the solute is dissolved in the

A) Precipitate

B) Solvent

C) Catalyst

D) Gas only

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Question 19

Solubility is the maximum amount of solute that dissolves in a given amount of solvent at a

A) Given colour

B) Given pressure only

C) Given temperature

D) Given mass only

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Question 20

Increasing temperature usually increases solubility of most solid solutes in water because particles

A) Move slower

B) Become gases

C) Lose mass

D) Move faster and dissolve more readily

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Question 21

A saturated solution contains the maximum dissolved solute at that temperature, while an unsaturated solution can dissolve

A) More solute

B) No more solute

C) Only gas

D) Only precipitate

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Question 22

How is a supersaturated solution usually made?

A) Cold unsaturated solution

B) Hot saturated solution carefully

C) Gas mixture

D) Precipitate

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Question 23

Like dissolves like means a polar solvent best dissolves a

A) Nonpolar solute only

B) Metal only

C) Polar solute

D) Gas only

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Question 24

Oil does not dissolve in water because oil is nonpolar and water is

A) Nonpolar

B) Ionic

C) Metallic

D) Polar

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Question 25

In a titration, a solution of known concentration is added to find the concentration of

A) Another solution

B) A pure solid only

C) A gas only

D) A catalyst

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ANSWER KEY

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

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