

Name \_\_\_\_\_

Date \_\_\_\_\_

**Select the best answer.**

1)

Standard temperature is exactly

- |           |           |
|-----------|-----------|
| a) 100°C. | b) 273°C. |
| c) 0°C.   | d) 0 K.   |

2)

Standard pressure is exactly

- |                 |             |
|-----------------|-------------|
| a) 1 atm.       | b) 760 atm. |
| c) 101.325 atm. | d) 101 atm. |

3)

The principle that under similar pressures and temperatures, equal volumes of gases contain the same number of molecules is attributed to

- |                |            |
|----------------|------------|
| a) Berthollet. | b) Proust. |
| c) Avogadro.   | d) Dalton. |

4)

According to Avogadro's law, 1 L of  $\text{H}_2(g)$  and 1 L of  $\text{O}_2(g)$  at the same temperature and pressure

- |                               |  |
|-------------------------------|--|
| a) have the same mass.        | b) have unequal volumes.               |
| c) contain 1 mol of gas each. | d) contain equal numbers of molecules. |

5)

The standard molar volume of a gas is all of the following except

- |  |   |
|--|---|
| a) the volume occupied by 1 mol of a gas at STP. | b) equal for all gases under the same conditions. |
| c) 22.4 L at STP.                                | d) dependent upon the size of the molecules.      |

6)

The standard molar volume of a gas at STP is

- |                     |              |
|---------------------|--------------|
| a) 22.4 L.          | b) g/22.4 L. |
| c) g-mol wt/22.4 L. | d) 1 L.      |

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7)

The standard molar volume of a gas at STP is all of the following except

- a) the volume occupied by 1 mol of the gas.
- b) 22.4 g.
- c) 22.4 L.
- d) the volume occupied by one molar mass of the gas.

8)

What is the volume occupied by 1 mol of oxygen at STP?

- a) 11.2 L
- b) 16.0 L
- c) 22.4 L
- d) 32.0 L

9)

What is the volume occupied by 1 mol of water vapor at STP?

- a) 11.2 L
- b) 18.0 L
- c) 22.4 L
- d) 33.6 L

10)

At STP, the standard molar volume of a gas of known volume can be used to calculate

- a) number of moles of gas.
- b) rate of diffusion.
- c) gram-molecular weight.
- d) gram-molecular volume.

11)

If the molecular formula of a gas is known, the molar volume is used directly in solving

- a) mass-mass problems.
- b) the volume of any mass of gas.
- c) percentage composition problems.
- d) gas volume-gas volume problems.

12)

Knowing the mass and volume of a gas at STP allows one to calculate the

- a) identity of the gas.
- b) molar mass of the gas.
- c) condensation point of the gas.
- d) rate of diffusion of the gas.

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13)

What is the molar mass of gas at STP?

- |   |  |
|---|--|
| a) density of the gas multiplied by the mass of 1 mol | b) density of the gas divided by the mass of 1 mol |
| c) density of the gas multiplied by 22.4 L            | d) density of the gas divided by 22.4 L            |

14)

A 1.00 L sample of a gas has a mass of 1.92 g at STP. What is the molar mass of the gas?

- |               |               |
|---------------|---------------|
| a) 1.92 g/mol | b) 19.2 g/mol |
| c) 22.4 g/mol | d) 43.0 g/mol |

15)

A 1.00 L sample of a gas has a mass of 0.716 g at STP. What is the molar mass of the gas?

- |                |               |
|----------------|---------------|
| a) 0.716 g/mol | b) 1.60 g/mol |
| c) 7.16 g/mol  | d) 16.0 g/mol |

16)

A 1.00 L sample of a gas has a mass of 1.25 g at STP. What is the mass of 1 mol of this gas?

- |                             |           |
|-----------------------------|-----------|
| a) a little less than 1.0 g | b) 1.25 g |
| c) 22.4 g                   | d) 28.0 g |

17)

A 1.00 L sample of a gas has a mass of 1.7 g at STP. What is the molar mass of the gas?

- |                |               |
|----------------|---------------|
| a) 0.076 g/mol | b) 13.2 g/mol |
| c) 38 g/mol    | d) 170 g/mol  |