ARKANSAS CHEMISTRY · UNIT 4 · 25 QUESTIONS

Gases, Thermodynamics, and Equilibrium — 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 **Pressure is force per unit area, and gas pressure results from particles**

- A Colliding with container walls
- B Dissolving in walls
- C Becoming liquids
- D Losing mass

Understand It with Pulse | Flag a mistake

2 **Boyle law states that at constant temperature, pressure and volume of a gas are**



A Directly proportional

B Unrelated

C Inversely proportional

D Equal always

Understand It with Pulse | Flag a mistake

3 **Charles law states that at constant pressure, volume and absolute temperature of a gas are**

A Inversely proportional

B Unrelated

C Directly proportional

D Equal always

Understand It with Pulse | Flag a mistake

4 **Gay Lussac law states that at constant volume, pressure and absolute temperature of a gas are**

A Inversely proportional

B Unrelated

C Equal always

D Directly proportional

Understand It with Pulse | Flag a mistake

5 **Combined gas law relates pressure, volume, and temperature by $P_1 \frac{V_1}{T_1}$ equals**

- **A** $P_2 V_2 \div T_2$
- **B** $P_2 V_2 \times T_2$
- **C** $P_2 + V_2$
- **D** $P_2 - V_2$

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6 **Absolute temperature must be in kelvin for gas law calculations because kelvin starts at**

- **A** Freezing point of water
- **B** Absolute zero
- **C** Boiling point of water
- **D** Room temperature

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7 **To convert 25 degrees Celsius to kelvin, add**



A 100

B 0

C 273

D 373

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8 **Ideal gas law is P V = n R T , where n represents**

A Pressure

B Volume

C Temperature

D Moles of gas

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9 **At standard temperature and pressure, one mole of an ideal gas occupies about**

A 22.4 litres

B 1.0 litre

C 10.0 litres

D 100 litres

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10 **Increasing temperature of a gas in a rigid container increases pressure because particles**



A Move more slowly

B Collide with walls more forcefully and often

C Become larger

D Lose energy

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11 **Kinetic molecular theory states gas particles are in constant random motion and collisions are**

A Inelastic always

B With walls only

C Elastic

D With liquids only

Understand It with Pulse | Flag a mistake

12 **According to kinetic molecular theory, gas particle volume is negligible compared with the**

A Mass of the gas

B Temperature

C Pressure

D Volume of the container

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13 **Diffusion of gases is faster for lighter particles because at the same temperature lighter particles move**

A Faster on average

B Slower on average

C At the same speed

D Not at all

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14 **Dalton law of partial pressures states total pressure of a gas mixture equals the**



A Product of partial pressures

B Sum of partial pressures

C Average pressure

D Largest partial pressure

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15 **A gas collected over water has total pressure equal to dry gas pressure plus**

A Oxygen pressure

B Nitrogen pressure

C Water vapour pressure

D Carbon dioxide pressure

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16 **An endothermic process absorbs heat from surroundings, for example**

A Freezing water

B Condensing steam

C Burning fuel

D Melting ice

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17 **An exothermic process releases heat, for example**

A Burning fuel

B Melting ice

C Evaporating water

D Subliming dry ice

Understand It with Pulse | Flag a mistake

18 **Enthalpy change for a reaction is negative when the reaction is**

A Endothermic

B Exothermic

C At equilibrium

D Reversible only

Understand It with Pulse | Flag a mistake

19 **Entropy measures disorder, and entropy increases when a solid**

A Freezes to a solid

B Condenses to a liquid

C Melts to a liquid

D Forms a crystal

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20 **Gibbs free energy change is negative for a process that is**

A Nonspontaneous

B At equilibrium only

C Endothermic only

D Spontaneous

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21 **At equilibrium, forward and reverse reaction rates are**

A Equal

B Zero

C Increasing

D Decreasing to zero

Understand It with Pulse | Flag a mistake

22 **Le Chatelier principle states a system at equilibrium shifts to**

A Increase the stress

B Counteract a stress applied to it

C Stop reacting

D Change its catalyst

Understand It with Pulse | Flag a mistake

23 **Increasing pressure on a gas equilibrium shifts toward the side with**

- A More moles of gas
- B No gas
- C Fewer moles of gas
- D Equal moles always

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24 **Adding more reactant to an equilibrium system shifts equilibrium toward**

- A Reactants
- B No change
- C Catalyst
- D Products

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25

Removing product from an equilibrium system shifts equilibrium toward

A Products

B Reactants

C No change

D Exothermic side only

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ANSWER KEY

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

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