ALASKA CHEMISTRY · FINAL EXAM · 50 QUESTIONS

Final Exam — 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 **A neutral atom has 17 protons. The number of electrons it has is**

- A 7
- B 17
- C 34
- D 18

Understand It with Pulse | Flag a mistake

2 **A covalent bond forms when atoms**

- A share pairs of electrons
- B transfer protons
- C lose neutrons
- D gain whole shells

Understand It with Pulse | Flag a mistake

3 **The number of moles in 54 g of water is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **A gas at 2 atm occupies 3 L. At constant temperature and 6 atm, its volume, in liters, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **Calcium has atomic number 20. The number of electrons in Ca^{2+} is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

6 **Water is a polar molecule because its electrons are**

A shared equally by all atoms

B transferred to hydrogen

C lost by oxygen

D shared unequally between oxygen and hydrogen

Understand It with Pulse | Flag a mistake

7 **The number of moles in 80 g of sodium hydroxide is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

8 **A gas at 1 atm occupies 6 L at 300 K. At 3 atm and 300 K, its volume, in liters, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **A sample has mass 96 g and volume 32 cm³. Its density, in grams per cm³, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

10 **The shape of a water molecule is**

A linear

B bent

C trigonal planar

D tetrahedral

Understand It with Pulse | Flag a mistake

11 **Percent yield is calculated as**

A theoretical yield divided by actual yield, times 100

B actual yield divided by theoretical yield, times 100

C actual yield plus theoretical yield

D theoretical yield minus actual yield

Understand It with Pulse | Flag a mistake

12 **According to Dalton law, the total pressure of a gas mixture is**

A the sum of the partial pressures

B the largest partial pressure

C the average of the partial pressures

D the smallest partial pressure

Understand It with Pulse | Flag a mistake

13 **Using whole number atomic masses (Na = 23, Cl = 35), the molar mass of sodium chloride, in grams per mole, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

14 **The name of the compound CO_2 is**

A carbon dioxide

B carbon monoxide

C carbon oxide

D dicarbon dioxide

Understand It with Pulse | Flag a mistake

15 **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

16 **A reaction releases 200 kJ per mole. The heat released, in kilojoules, by 2 mol is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

17 **An atom has 34 protons and 45 neutrons. Its mass number is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

18 **In the reaction $2H_2 + O_2 \rightarrow 2H_2O$, the reaction type is**

- A decomposition
- B synthesis
- C single displacement
- D double displacement

Understand It with Pulse | Flag a mistake

19 **The mass, in grams, of 4 mol of water is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

20 **At equilibrium, the forward and reverse reaction rates are**

A both zero

B unrelated

C at a maximum

D equal

Understand It with Pulse | Flag a mistake

21 **The maximum number of electrons in the second energy level is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

22 **The pair of elements with the largest difference in electronegativity is**

- A sodium and fluorine
- B hydrogen and hydrogen
- C carbon and hydrogen
- D nitrogen and nitrogen

Understand It with Pulse | Flag a mistake

23 **In the reaction $N_2 + 3H_2 \rightarrow 2NH_3$,**
the moles of ammonia formed from 9 mol of hydrogen with excess nitrogen is ____

ANSWER _____

Understand It with Pulse | Flag a mistake

24 **A catalyst in an equilibrium system**

- **A** shifts equilibrium to the products
- **B** shifts equilibrium to the reactants
- **C** speeds both rates without shifting the position
- **D** changes the equilibrium constant

Understand It with Pulse | Flag a mistake

25 **Phosphorus is in group 15. The number of valence electrons it has is**

- **A** 3
- **B** 5
- **C** 7
- **D** 8

Understand It with Pulse | Flag a mistake

26 **The oxidation number of sodium in sodium chloride, NaCl, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

27 **Using whole number atomic masses (Mg = 24, S = 32, O = 16), the molar mass of magnesium sulfate, in grams per mole, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

28 **A reaction has enthalpy change -100 kJ, entropy change -0.2 kJ per kelvin, and temperature 300 K. Its Gibbs free energy change, in kilojoules, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

29 **Isotopes of an element have the same number of**

- **A** neutrons but different numbers of protons
- **B** electrons but different numbers of protons
- **C** protons but different numbers of neutrons
- **D** protons and neutrons in every case

Understand It with Pulse | Flag a mistake

30 **In the balanced equation $H_2 + Cl_2 \rightarrow$ ____ HCl, the coefficient of hydrogen chloride is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

31 **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

32 **Which unit measures gas pressure**

- A atmosphere
- B liter
- C mole
- D kelvin

Understand It with Pulse | Flag a mistake

33 **Sulfur has atomic number 16. The number of electrons in S^{2-} is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

34 **The number of valence electrons in a nitrogen atom is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

35 **Adding solvent to a solution without adding solute**

A increases its molarity

B decreases its molarity

C does not change its molarity

D makes it saturated

Understand It with Pulse | Flag a mistake

36 **Using R = 0.0821 L atm per mol K, the pressure, in atmospheres, of 1 mol of gas in 11.2 L at 273 K, to the nearest whole number, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

37 **Zinc-65 has atomic number 30. The number of neutrons in zinc-65 is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

38 **In the balanced equation N_2 + _____ H_2 → $2NH_3$, the coefficient of hydrogen is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

39 **After a reaction finishes, the reactant left over is the**

A limiting reactant

B catalyst

C product

D excess reactant

Understand It with Pulse | Flag a mistake

40 **Removing product from a system at equilibrium shifts it toward the**

A reactants

B catalyst

C starting point only

D products

Understand It with Pulse | Flag a mistake

41 **A sample has mass 200 g and density 4 g per cm³. Its volume, in cm³, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

42 **The number of shared electron pairs in an oxygen molecule, O_2, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

43 **A 100 mL sample of 2.0 M solution is diluted to 500 mL. The new molarity, in moles per liter, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

44 **Entropy of a gas is generally**

A less than that of a liquid

B zero

C greater than that of a liquid

D equal to that of a solid

Understand It with Pulse | Flag a mistake

45 **Using whole number atomic masses (N = 14, H = 1), the molar mass of ammonia, in grams per mole, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

46 **The oxidation number of chlorine in hydrogen chloride, HCl, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

47 **At standard temperature and pressure, the volume, in liters, of 0.5 mol of hydrogen gas is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

48 **A reaction releases a total of 100 kJ from 2 mol of reactant. The heat released per mole, in kilojoules, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

49 **An atom has mass number 31 and 16 neutrons. The number of protons in the atom is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

50 **In the balanced equation $2Mg + ____ O_2 \rightarrow 2MgO$, the coefficient of oxygen is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. B
2. A
3. 3
4. 1
5. 18
6. D
7. 2
8. 2
9. 3
10. B
11. B
12. A
13. 58
14. A
15. C
16. 400
17. 79
18. B
19. 72
20. D
21. 8
22. A
23. 6
24. C
25. B
26. 1
27. 120
28. -40
29. C
30. 2
31. A
32. A
33. 18
34. 5
35. B
36. 2
37. 35
38. 3
39. D
40. D
41. 50
42. 2
43. 0.4
44. C
45. 17
46. -1
47. 11.2
48. 50
49. 15
50. 1

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