ARIZONA 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 **Which change is a chemical change**

- A Dissolving salt in water
- B Breaking a glass
- C Melting ice
- D Rusting iron

Understand It with Pulse | Flag a mistake

2 **A covalent bond forms when atoms**

- A Transfer protons
- B Lose neutrons
- C Gain whole shells
- D Share electrons

Understand It with Pulse | Flag a mistake

3 **Using atomic masses 12 for carbon and 16 for oxygen, the molar mass of carbon dioxide, in grams per mole, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

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

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **The nucleus of an atom contains**

A Protons and electrons

B Neutrons and electrons

C Protons and neutrons

D Electrons only

Understand It with Pulse | Flag a mistake

6 **Which molecule is polar**

A H_2

B O_2

C N_2

D HCl

Understand It with Pulse | Flag a mistake

7 **Methane has molar mass 16 grams per mole. The number of moles in 80 g of methane is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

8 **A gas has pressure 2 atm and volume 6 L at temperature 300 K. At 3 atm and 600 K, its volume, in liters, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **The chemical symbol for potassium is**

- **A** K
- **B** P
- **C** Po
- **D** Pt

Understand It with Pulse | Flag a mistake

10 **The formula of magnesium chloride is**

- **A** $MgCl$
- **B** $MgCl_2$
- **C** Mg_2Cl
- **D** Mg_2Cl_2

Understand It with Pulse | Flag a mistake

11 **Sodium hydroxide has molar mass 40 grams per mole. The mass, in grams, of 1.5 mol of sodium hydroxide is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

12 **In kinetic theory, the temperature of a gas measures the average**

A Mass of its particles

B Size of its particles

C Charge of its particles

D Kinetic energy of its particles

Understand It with Pulse | Flag a mistake

13 **Which of these is a homogeneous mixture**

A Salt water

B Sand and water

C Oil and water

D Iron filings and sulfur

Understand It with Pulse | Flag a mistake

14 **The reaction**
$2Na + Cl_2 \rightarrow 2NaCl$
is an example of

A Neutralization

B Decomposition

C Synthesis

D Double displacement

Understand It with Pulse | Flag a mistake

15 **Adding water to a solution without adding solute**

A Increases its concentration

B Decreases its concentration

C Leaves its concentration unchanged

D Removes the solute

Understand It with Pulse | Flag a mistake

16 **An exothermic reaction has an enthalpy change that is**

A Positive

B Negative

C Zero

D Always large

Understand It with Pulse | Flag a mistake

17 **Elements in Group 1 of the periodic table are called**

A Halogens

B Noble gases

C Alkali metals

D Transition metals

Understand It with Pulse | Flag a mistake

18 **The oxidation number of nitrogen in nitrogen dioxide, NO_2, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

19 **At standard temperature and pressure, the volume, in liters, of 3 mol of gas is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

20 **If the concentration of a reactant is increased, equilibrium shifts**

- A Not at all
- B Until the reaction stops
- C Toward the products
- D Toward the reactants

Understand It with Pulse | Flag a mistake

21 **An atom has 8 protons and 9 neutrons. Its mass number is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

22 **Nitrogen has atomic number 7. How many valence electrons does a nitrogen atom have**

A 3

B 5

C 7

D 2

Understand It with Pulse | Flag a mistake

23 **The concentration of a solution increases when**

A Solute is added

B Water is added

C Solution is poured out

D Solution is cooled

Understand It with Pulse | Flag a mistake

24 **A catalyst in a reversible reaction**

A Speeds both directions and leaves the equilibrium position unchanged

B Shifts equilibrium toward products

C Shifts equilibrium toward reactants

D Stops the reverse reaction

Understand It with Pulse | Flag a mistake

25 **A calcium ion carries a double positive charge and has 20 protons. The number of electrons it has is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

26 **Which substance has only London dispersion forces between its molecules**

- **A** H_2
- **B** HCl
- **C** H_2O
- **D** NH_3

Understand It with Pulse | Flag a mistake

27 **Carbon dioxide has molar mass 44 grams per mole. The number of moles in 132 g of carbon dioxide is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

28 **A reaction releases 150 kJ per mole. The heat released, in kilojoules, by 3 mol is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

29 **The idea that atoms of the same element are identical comes from**

A Thomson

B Schrodinger

C Dalton

D Bohr

Understand It with Pulse | Flag a mistake

30 **The reaction**
$AgNO_3 + NaCl \rightarrow AgCl + NaNO_3$
is best described as

A Double displacement

B Single displacement

C Synthesis

D Decomposition

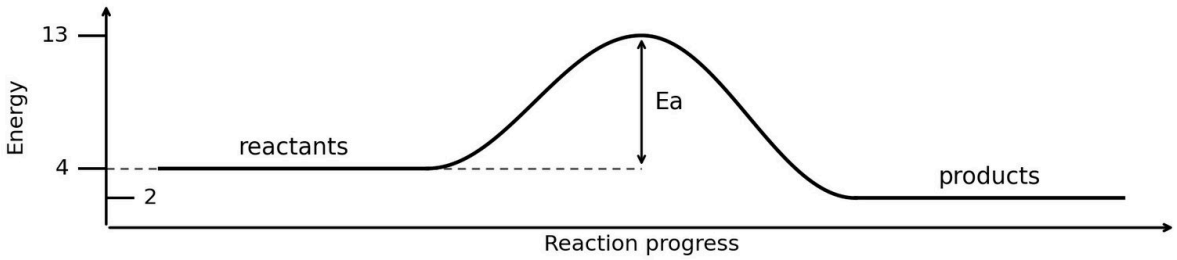
Understand It with Pulse | Flag a mistake

31 **Using atomic masses 23 for sodium and 35.5 for chlorine, the molar mass of sodium chloride, in grams per mole, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

32 **The energy diagram shows reactants, a peak, and products. The activation energy is the peak minus the reactants. With reactants at 4 , peak at 13 , and products at 2, the activation energy is**



Question 32

The energy diagram shows reactants, a peak, and products. The activation energy is the peak minus the reactants. With reactants at 4 , peak at 13 , and products at 2, the activation energy is

A) 4

B) 9

C) 13

D) 2

A 4

B 9

C 13

D 2

Understand It with Pulse **Flag a mistake**

33 **Potassium 39 has atomic number 19. The number of neutrons in this atom is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

34 **The oxidation number of manganese in manganese dioxide, MnO_2, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

35 **Which solution is more concentrated**

A 0.5 mol per liter

B 2 mol per liter

C 4 mol per liter

D 1 mol per liter

Understand It with Pulse | Flag a mistake

36 **A temperature of 127 degrees Celsius, in kelvin, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

37 **A sample has mass 120 g and volume 30 cm³. Its density, in grams per cm³, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

38 **In the balanced equation**
2Al + ____ Cl_2 → 2$AlCl_3$,
the coefficient of chlorine is ____

ANSWER _____

Understand It with Pulse | Flag a mistake

39 **Magnesium oxide has molar mass 40 grams per mole. The mass, in grams, of 2.5 mol of magnesium oxide is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

40 **An enthalpy change that is positive means the reaction is**

A Catalyzed

B Endothermic

C Exothermic

D At equilibrium

Understand It with Pulse | Flag a mistake

41 **A neutral sulfur atom has atomic number 16. The number of electrons it has is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

42 **Carbon has atomic number 6. How many valence electrons does a carbon atom have**

A 2

B 4

C 6

D 3

Understand It with Pulse | Flag a mistake

43 **Oxygen gas has molar mass 32 grams per mole. The number of moles in 64 g of oxygen gas is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

44 **A large equilibrium constant means that at equilibrium**

- **A** Reactants are favoured
- **B** No reaction occurs
- **C** The reaction is slow
- **D** Products are favoured

Understand It with Pulse | Flag a mistake

45 **An atom has 11 protons and 12 neutrons. Its mass number is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

46 **The oxidation number of chromium in chromium oxide, Cr_2O_3, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

47 **When a solution is diluted, the number of moles of solute**

- A Stays the same
- B Increases
- C Decreases
- D Becomes zero

Understand It with Pulse | Flag a mistake

48 **A gas has pressure 200 kPa at 400 K. At constant volume and 200 K, its pressure, in kilopascals, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

49 **A sample has mass 90 g and density 3 grams per cm³. Its volume, in cm³, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

50 **The total number of valence electrons in a carbon dioxide molecule, CO_2, is ____**

ANSWER

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	D	**18.**	4	**35.**	C
2.	D	**19.**	67.2	**36.**	400
3.	44	**20.**	C	**37.**	4
4.	2	**21.**	17	**38.**	3
5.	C	**22.**	B	**39.**	100
6.	D	**23.**	A	**40.**	B
7.	5	**24.**	A	**41.**	16
8.	8	**25.**	18	**42.**	B
9.	A	**26.**	A	**43.**	2
10.	B	**27.**	3	**44.**	D
11.	60	**28.**	450	**45.**	23
12.	D	**29.**	C	**46.**	3
13.	A	**30.**	A	**47.**	A
14.	C	**31.**	58.5	**48.**	100
15.	B	**32.**	B	**49.**	30
16.	B	**33.**	20	**50.**	16
17.	C	**34.**	4		

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