

- D13- Find the empirical formula for a compound that is 36.86 g (N) and 63.14 g (O).
 a- NO_2 b- N_2O_3 c- NO d- N_2O
- D14- The oxidation state of copper (Cu) atom is _____.
 a- 2 b- 0 c- 3 d- 4
- D15- Which of the following is a strong base?
 a- NH_3 b- HCl c- NaOH d- KBr
- D16- Which of the following is a polar covalent bond?
 a- HF b- Cl₂ c- NaCl d- Br₂
- D17- Which of the following is a diprotic acid?
 a- HF b- NaCl c- H_2SO_4 d- Al
- D18- The definition of oxidation is the _____.
 a- loss of electrons b- gain of electrons c- loss of protons d- gain of protons
- D19- When the following equation is balanced; the coefficient "a" is _____.
 $\text{CH}_4(g) + \text{a O}_2(g) \rightarrow \text{CO}_2(g) + 2 \text{H}_2\text{O}(l)$
 a- 4 b- 5 c- 1 d- 2
- D20- Which of the following is considered a strong electrolyte?
 a- NaCl solution b- sugar solution c- acetic acid d- NaCl solid
- D21- Which of the following has the highest bond length?
 a- $\text{N}=\text{O}$ b- $\text{N}-\text{N}$ c- $\text{N}\equiv\text{N}$ d- $\text{N}=\text{N}$
- D22- The type of chemical bond between metal and metal is _____.
 a- ionic bond b- covalent bond c- nonmetallic bonding d- metallic bonding
- D23- What is the Lewis structure of water molecule?
 a- $\begin{array}{c} \text{H} & \ddot{\text{O}} & \text{H} \\ & \backslash & / \\ & \text{O} & \end{array}$ b- $\begin{array}{c} \text{H} & \ddot{\text{O}} & \text{H} \\ & \cdot & \cdot \\ & \text{O} & \end{array}$ c- $\begin{array}{c} \text{H} & \ddot{\text{O}} & \text{H} \\ & \cdot & \cdot \\ & \text{O} & \end{array}$ d- $\begin{array}{c} \text{H} & \ddot{\text{O}} & \text{H} \\ & \cdot & \cdot \\ & \text{O} & \end{array}$
- D24- Which of the following is the most electronegative element?
 a- fluorine b- carbon c- nitrogen d- iodine
- D25- An acid reacts with a base to form _____.
 a- water + salt b- a precipitate c- a gas d- water + gas

Good Luck

(Choose and mark the correct answer in the Answer Sheet)

A1- Which of the following is a precipitate?

- a- $\text{KI}_{(aq)}$ b- $\text{PbI}_2(s)$ c- $\text{H}_2(g)$ d- $\text{PbNO}_{3(aq)}$

A2- Which of the following is a polar covalent bond?

- a- Na b- Cl_2 c- NaCl d- HCl

A3- In a neutralization reaction, an acid usually reacts with _____.

- a- a gas b- a base c- a precipitate d- water

A4- The following reaction: $\text{Zn}_{(s)} + \text{Fe}^{2+}_{(aq)} \rightarrow \text{Zn}^{2+}_{(aq)} + \text{Fe}_{(s)}$ is _____.

- a- oxidation-reduction reaction b- acid-base reaction c- precipitation reaction d- none

A5- The following equation: $\text{H}^+(aq) + \text{OH}^{-}(aq) \rightarrow \text{H}_2\text{O}(l)$ is _____ equation.

- a- molecular b- spectator c- net ionic d- none

A6- Which of the following aqueous solutions can conduct electricity?

- a- $(\text{CH}_3)_2\text{O}$ b- $\text{C}_6\text{H}_{12}\text{O}_6$ c- NaCl d- none

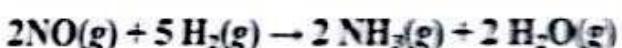
A7- The oxidation state of "N" in "NH₃" is _____.

- a- (-1) b- (+3) c- (+1) d- (-3)

A8- Which of the following is the least electronegative element?

- a- carbon b- nitrogen c- francium d- iodine

A9- Ammonia (NH₃) can be synthesized by the reaction:



Starting with 86.3 g NO and 25.6 g H₂, find the limiting reactant?

- a- H₂ b- NH₃ c- NO d- H₂O

A10- To what volume should you dilute 0.2 L of 15.0 M KI solution to obtain 3.0

- a- 1.0 L b- 10.0 L c- 1.0 mL d- 0.1 mL

A11- Which of the following bonds have the least bond length?

- a- Cl-Cl b- Br-Br c- F-F d- H-I

A12- Which of the following has the highest bond energy?

- a- N=O b- N—N c- N≡N d- N=N

A13- Give the name of PbCl_4 .

- a- lead (V) chloride b- lead (VI) chloride c- lead (IV) chloride d- lead (II) chloride

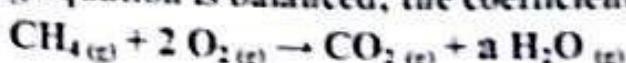
A14- Give the name of NI_3 .

- a- nitrogen triiodide b- mononitrogen iodide c- nickel triiodide d- none

A15- Find molecular formula for " $\text{C}_2\text{H}_3\text{O}$ " which has a molar mass of 86.09 g/mol?

- a- CHO b- $\text{C}_4\text{H}_6\text{O}_2$ c- $\text{C}_4\text{H}_8\text{O}_3$ d- C_2HO

A16- When the following equation is balanced; the coefficient "a" is _____.



- a- 2 b- 5 c- 1 d- 4

A17- The name of $\text{Cr}_2\text{O}_7^{2-}$ ion is _____.

- a- chromium b- chromes c- chromate d- dichromate

A18- Give the chemical formula for ammonium nitrate.

- a- NH_4NO_3 b- Al_2NO_3 c- NH_4NO_2 d- AlNO_2

A19- What is the name of $\text{HI}_{(\text{aq})}$?

- a- hydrochloric acid b- hydroiodic acid c- hydroflouric acid d- hydrobromic acid

A20- Which of the following is an atomic element?

- a- H_2O b- F_2 c- KNO_3 d- Xe

A21- The formula for the compound that forms between calcium and oxygen is

- a- NaO b- CaO c- CaO_2 d- Ca_2O

A22- What is the empirical formula for CCl_4 ?

- a- C_2Cl_8 b- CCl c- CCl_4 d- C_4Cl

A23- Calculate the mass percent composition of Cl in CCl_2F_2 .

- a- 58.64 % b- 12.22 % c- 60.05 % d- 18.64 %

A24- What is the percent yield of the product if the actual yield was 2.65 g and theoretical yield was 4.55 g?

- a- 67.42% b- 57.17% c- 58.24% d- 50.12%

A25- What is the molarity (mol/L) of 2.0 mol NaOH in 2.0 L H_2O ?

- a- 0.08 mol/L b- 1.0 mol/L c- 0.10 mol/L d- 0.04 mol/L

Good Luck

(Choose and mark the correct answer in the Answer Sheet)

- D1- How many grams of HCl required to prepare a 1 L of 1 M HCl?
- a- 6.0 g b- 36.5 g c- 22.7 g d- 44.4 g

D2- Give the chemical formula for lithium dichromate.

- a- BaCl₂ b- Li₂Cr₂O₇ c- Na₂Cr₂O₇ d- Li₂SO₄

D3- Calculate the mass percent composition of sulfur (S) in Al₂(SO₄)₃.

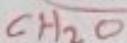
a- 28.07 % b- 42.22 % c- 50.05 % d- 88.12 %

D4- If 0.1 L of 0.25 M NaOH is diluted to 0.3 L, what is the final concentration of diluted solution?

- a- 0.083 M b- 0.053 M c- 0.063 M d- 0.073 M

D5- What is the empirical formula for C₆H₁₂O₆?

- a- C₃H₆O₃ b- CH₂O c- CH₃O d- CHO



D6- What is the percent yield of the product if the actual yield was 6.65 g and the theoretical yield was 8.55 g?

- a- 97.42% b- 87.17% c- 77.78% d- 50.12%

$$\frac{6.65}{8.55} \times 100$$

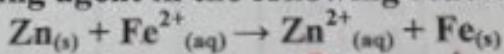
D7- Give the name for FeSO₄.

- a- iron (II) sulfate b- iron (III) sulfate c- iron thiosulfate d- iron (II) sulfide

D8- Determine the name of HF_(aq).

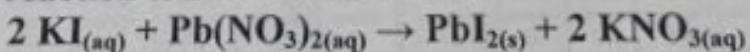
- a- hydrochloric acid b- hydroiodic acid c- hydroflouric acid d- hydrobromic acid

D9- Determine the reducing agent in the following reaction.



- a- Fe_(s) b- Fe⁺² c- Zn_(s) d- FeCl₂

D10- The following reaction is a _____.



- a- precipitation reaction b- acid-base reaction c- oxidation-reduction reaction d- none

D11- Which of the following is a molecular element?

- a- Xe b- I₂ c- NaNO₃ d- H₂O

D12- Which of the following is an ionic compound?

- a- NO₂ b- Na⁺ c- S₈ d- LiCl