Name: $\qquad$ Class: $\qquad$ Date: $\qquad$ ID: G

## Fall Semester Review Practice Test

## Multiple Choice

Identify the choice that best completes the statement or answers the question. You may write on the test, however only your answers on the scantron will be graded.
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$\qquad$

| $(-1)$ Charge <br> Formula | $(-1)$ Charge Names | $(-2)$ Charge <br> Formula | $(-2)$ Charge Names |
| :--- | :--- | :--- | :--- |
| $\mathrm{H}_{2} \mathrm{PO}_{4}^{-}$ | Dihydrogen <br> phosphate | $\mathrm{HPO}_{4}{ }^{2-}$ | Hydrogen <br> phosphate |
| $\mathrm{HSO}_{3}^{-}$ | Hydrogen Sulfite | $\mathrm{Cr}_{2} \mathrm{O}_{7}{ }^{2-}$ | Dichromate |
| $\mathrm{HSO}_{4}^{-}$ | Hydrogen <br> Carbonate | Permanganate |  |
| $\mathrm{HCO}_{3}^{-}$ | Hypochlorite |  | Peroxide |
| $\mathrm{MnO}_{4}^{-}$ | Chlorite |  |  |
| $\mathrm{CeO}^{-}$ | $\mathrm{ClO}_{2}^{-}$ |  |  |

$\qquad$ 1. A solution is known as a:
a. homogeneous mixture
c. element
b. heterogeneous mixture
d. compound
2. Which of the following elements has the smallest atomic radius?
a. sulfur
c. selenium
b. bromine
d. chlorine
$\qquad$ 3. Which of the following sets of symbols represents isotopes of the same element?
a. ${ }_{42}^{91} \mathrm{~J} \quad{ }_{42}^{92} \mathrm{~J} \quad{ }_{40}^{93} \mathrm{~J}$
b. $\quad{ }_{19}^{50} \mathrm{~L} \quad{ }_{20}^{50} \mathrm{~L} \quad{ }_{21}^{50} \mathrm{~L}$
c. $\quad{ }_{38}^{84} \mathrm{M}{ }_{38}^{86} \mathrm{M}{ }_{38}^{87} \mathrm{M}$
d. $\quad{ }_{59}^{138} \mathrm{Q} \quad{ }_{55}^{133} \mathrm{Q} \quad{ }_{54}^{133} \mathrm{Q}$
$\qquad$ 4. Using the figure below, which radiation has the lowest frequency?

a. X rays
b. Ultraviolet
c. Microwave
d. Gamma rays
$\qquad$ 5. The correct coefficent for oxygen when the equation is balanced is:
$\mathrm{C}_{2} \mathrm{H}_{4}+\mathrm{O}_{2} \rightarrow \mathrm{CO}_{2}+\mathrm{H}_{2} \mathrm{O}$
a. 1
b. 2
c. 3
d. 6
e. 14
6. Choose the correct valence electrons for lead.
a. $6 s^{2} 4 f^{14} 5 d^{10} 6 p^{2}$
b. $7 \mathrm{~s}^{2} 7 \mathrm{p}^{2}$
c. $6 s^{2} 6 p^{2}$
d. $5 \mathrm{~s}^{2} 4 \mathrm{~d}^{10} 5 \mathrm{p}^{2}$
$\qquad$ 7. When a metallic oxide, like KOH , reacts with water the product is $\mathrm{a}(\mathrm{an})$ :
a. acid
b. base
8. Which element(s) makeup the star spectrum below.

EMISSION SPECTRA


Stax Spectrum $\square$
a. He and Na
b. He and Li
c. He and H
d. Li and H
9. Choose the correct formula for Ammonium oxalate.
a. $\left(\mathrm{NH}_{4}\right)_{2} \mathrm{C}_{2} \mathrm{H}_{3} \mathrm{O}_{2}$
b. $\mathrm{NH}_{4} \mathrm{C}_{2} \mathrm{O}_{4}$
c. $\left(\mathrm{NH}_{4}\right)_{2} \mathrm{C}_{2} \mathrm{O}_{4}$
d. $\mathrm{C}_{2} \mathrm{O}_{4}\left(\mathrm{NH}_{4}\right)_{2}$
10. Which of the following is NOT a physical change?
a. Rusting
c. Breaking
b. Slicing
d. Melting
11. What is the volume of the liquid?

a. $\quad 6.1 \mathrm{~mL}$
b. $\quad 6.5 \mathrm{~mL}$
c. $\quad 6.2 \mathrm{~mL}$
d. $\quad 6.6 \mathrm{~mL}$
12. Classify sodium nitrate as what type of representative particle?
a. formula unit
c. ion
b. atom
d. molecule
13. Classify the type of reaction: $\mathrm{Ca}+\mathrm{O}_{2} \rightarrow \mathrm{CaO}$
a. double replacement
c. decomposition
b. synthesis
d. combustion
14. What piece of equipment is used to transfer solid chemicals?
a. test tube tongs
c. funnel
b. scoopula
d. micropipette
15. Elements will emit light when:
a. they absorb energy.
b. they fall from the ground state to the excited state.
c. they gain energy from the ground state to the excited state.
d. they fall from the excited state to the ground state.
16. Arrange the following elements: $\mathrm{P}^{3-}, \mathrm{S}^{2-}, \mathrm{K}^{+}, \mathrm{Ca}^{2+}, \mathrm{Sc}^{3+}$, in order of increasing ionic size.
a. $\quad \mathrm{Sc}^{3+}, \mathrm{Ca}^{2+}, \mathrm{K}^{+}, \mathrm{S}^{2-}, \mathrm{P}^{3-}$
b. $\mathrm{P}^{3-}, \mathrm{S}^{2-}, \mathrm{K}^{+}, \mathrm{Ca}^{2+}, \mathrm{Sc}^{3+}$
c. $\mathrm{Sc}^{3+}, \mathrm{Ca}^{2+}, \mathrm{K}^{+}, \mathrm{P}^{3-}, \mathrm{S}^{2-}$
d. $\mathrm{K}^{+}, \mathrm{Ca}^{2+}, \mathrm{Sc}^{3+}, \mathrm{S}^{2-}, \mathrm{P}^{3-}$
$\qquad$ 17. Which of the following is a homogeneous mixture?
a. Raisin Bread
c. Salt water
b. Beef Stew
d. Chocolate chip cookie
18. Which equation correctly represents the alpha decay of Polonium-214
a.

$$
{ }_{84}^{214} \mathrm{Po} \rightarrow{ }_{85}^{214} \mathrm{Po}+{ }_{-1}^{0} \mathrm{e}
$$

$$
{ }_{84}^{214} \mathrm{Po} \rightarrow{ }_{82}^{210} \mathrm{~Pb}+{ }_{2}^{4} \mathrm{He}
$$

b.

$$
{ }_{84}^{214} \mathrm{Po}+{ }_{4}^{2} \mathrm{He} \rightarrow{ }_{90}^{216} \mathrm{Th}
$$

c.

$$
{ }_{84}^{214} \mathrm{Po} \rightarrow{ }_{82}^{214} \mathrm{~Pb}+{ }_{2}^{0} \mathrm{He}
$$

19. What is the polarity of $\mathrm{SiO}_{2}$ ?
a. ionic
c. polar
b. nonpolar
20. $\mathrm{LiOH}+\mathrm{H}_{3} \mathrm{PO}_{4} \rightarrow \mathrm{Li}_{3} \mathrm{PO}_{4}+\mathrm{H}_{2} \mathrm{O}$

Classify the type of reaction.
a. combustion
c. single replacement
b. neutralization
d. double replacement
21. Choose the correct name for $\mathrm{SnS}_{2}$
a. Tin sulfide
c. Tin (IV) sulfide
b. Tin disulfide
d. Tin (II) sulfide
22.

Which of the following is the correct Lewis structure for ethylene, $\mathrm{C}_{2} \mathrm{H}_{4}$ ?

a.

b.
d.

c.

23. This piece of equipment is used to heat small amount of substances at high temperatures.
a. hot plate
c. crucible and cover
b. beaker
d. graduated cylinder
24. What is the correct name for the following $\mathrm{N}_{2} \mathrm{O}_{4}$ ?
a. nitrogen tetraoxide
c. dinitrogen oxide
b. nitrogen (IV) oxide
d. dinitrogen tetroxide
25. The following equation is an example of:

$$
{ }_{1}^{2} H+{ }_{1}^{3} H \rightarrow{ }_{2}^{4} H e+{ }_{0}^{1} n+\text { energy }
$$

a. fission reaction
b. fusion reaction
26. Which of the following elements can exist as a diatomic molecule?
a. Br
b. Se
c. $P$
d. Se

## Multiple Response

Identify one or more choices that best complete the statement or answer the question.
27. Which of the following are mixtures?
a. Gatorade
c. Salt
b. Diet Coke
d. Iron
28. The following compound, NaOH , can be classifed as:
a. does not conduct electricity
d. ionic compound
b. molecule
e. formula unit
c. does conduct electricity
29. The following compound, $\mathrm{C}_{2} \mathrm{H}_{2}$, can be classifed as:
a. does conduct electricity
c. ionic compound
b. molecule
d. does not conduct electricity
30. What intermolecular forces are present in $\mathrm{CH}_{3} \mathrm{OH}$ ?
a. Dipole-Dipole
c. Hydrogen Bonding
b. Dispersion
d. Ionic Bonding
31. Which groups below can be classified as representative elements?
a. halogens
c. all group B elements
b. noble gases
d. alkali earth metals
32. Covalent compounds are:
a. Electrons are shared.
d. Held together by intermolecular forces.
b. Held together by electrostatic forces.
e. Electrons are transferred.
c. At room temperature they are a solid, liquid or gas.
33. Ionic compounds are:
a. Electrons are shared.
d. Held together by intermolecular forces.
b. Held together by electrostatic forces.
e. Electrons are transferred.
c. At room temperature they are a solid,
f. Formula units liquid or gas.
34. Which of the following compounds are polar?
a. $\mathrm{CH}_{3} \mathrm{OH}$
b. $\mathrm{C}_{2} \mathrm{H}_{2}$
c. HCN
d. $\mathrm{SiO}_{2}$

## Matching

a. chemical burn
d. forceps
b. irritant
e. beaker tongs
c. thermal burn
f. funnel
35. This burn occurs when the skin or a mucous membrane is damaged by contact with a substance 36. NaOH

37.
38. This burn can occur if you touch a hot object or flame.
39.

40.

## Fall Semester Review Practice Test

 Answer Section
## MULTIPLE CHOICE

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

## MULTIPLE RESPONSE

27. ANS: A, B PTS: 1
28. ANS: C, D, E PTS: 1
29. ANS: B, D PTS: 1
30. ANS: A, B, C PTS: 1
31. ANS: A, B, D PTS: 1
32. ANS: A, C, D PTS: 1
33. ANS: B, E, F PTS: 1
34. ANS: A, C

PTS: 1
PTS: 1
PTS: 1
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PTS: 1

PTS: 1

## MATCHING

35. ANS: A
36. ANS: B
37. ANS: E
38. ANS: C
39. ANS: F
40. ANS: D

PTS: 1
PTS: 1
PTS: 1
PTS: 1
PTS: 1
PTS: 1

