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## Fall Midterm Practice Test-Fall 2017

## Matching <br> *You will need your own calculator and pencil for the midterm. If you forget a calculator you will do the math by hand. <br> *Question about the midterm will not be answered on the midterm day. <br> *You need to start studying early. <br> *Midterm is $\mathbf{1 5 \%}$ of your grade!

Match each item with the correct statement below.
a. mixture
d. reactant
b. product
e. heterogeneous mixture
c. phase
f. vapor

1. gaseous state of substance that is a liquid or solid at room temperature
2. a physical blend of two or more components
3. not uniform in composition
4. a substance formed in a chemical reaction
5. starting substance in a chemical reaction

Match each item with the correct statement below.
a. mass number
d. atomic mass
b. atomic mass unit
e. isotope
c. atomic number
6. atoms with the same number of protons, but different numbers of neutrons in the nucleus of an atom
7. the total number of protons and neutrons in the nucleus of an atom
8. the number of protons in the nucleus of an element
9. the weighted average of the masses of the isotopes of an element
10. one-twelfth the mass of a carbon atom having six protons and six neutrons

Match each item with the correct statement below.
a. atomic orbital
d. ground state
b. aufbau principle
e. Pauli exclusion principle
c. electron configuration
f. Heisenberg uncertainty principle
11. region of high probability of finding an electron
12. states the impossibility of knowing both velocity and position of a moving particle at the same time
13. lowest energy level
14. tendency of electrons to enter orbitals of lowest energy first
15. arrangement of electrons around atomic nucleus
16. each orbital has at most two electrons

## Multiple Choice

Identify the choice that best completes the statement or answers the question.
17. A theory is a $\qquad$ .
a. proposed explanation for an observation
b. well-tested explanation for a broad set of observations
c. summary of the results of many observations
d. procedure used to test a proposed explanation
18. The variable that is observed during an experiment is called what type of variable?
a. independent
c. controlling
b. manipulated
d. responding
19. Which of the following is NOT an example of matter?
a. air
c. smoke
b. heat
d. water vapor
20. An example of an extensive property of matter is $\qquad$ -
a. temperature
c. mass
b. pressure
d. hardness
21. All of the following are physical properties of matter EXCEPT $\qquad$ .
a. mass
c. melting point
b. color
d. ability to rust
$\qquad$ 22. Which of the following is a physical change?
a. corrosion
c. evaporation
b. explosion
d. rotting of food
23. Which of the following CANNOT be classified as a substance?
a. table salt
c. nitrogen
b. air
d. gold
24. Which of the following is a homogeneous mixture?
a. salt water
c. sand and water
b. beef stew
d. soil
25. Separating a solid from a liquid by evaporating the liquid is called $\qquad$ .
a. filtration
c. solution
b. condensation
d. distillation
26. Which of the following processes does NOT involve a change in chemical properties?
a. rusting
c. boiling
b. fermenting
d. burning
27. A chemical change occurs when a piece of wood $\qquad$ .
a. is split
c. decays
b. is painted
d. is cut
28. Which of the following is a chemical property of water at $4^{\circ} \mathrm{C}$ ?
a. its color
b. its state
c. its temperature
d. its ability to decompose into hydrogen and oxygen
29. Which of the following indicates that a chemical change has happened during cooking?
a. The food darkens.
b. Bubbles form in boiling water.
c. Butter melts.
d. Energy is transferred from the stove to a pan.
30. Which of the following does NOT indicate that a chemical change may have taken place?
a. fracture formation
c. precipitate formation
b. gas production
d. energy transfer
31. The smallest particle of an element that retains the properties of that element is $a(n)$ $\qquad$ .
a. atom
c. proton
b. electron
d. neutron
32. Dalton's atomic theory included which idea?
a. All atoms of all elements are the same size.
b. Atoms of different elements always combine in one-to-one ratios.
c. Atoms of the same element are always identical.
d. Individual atoms can be seen with a microscope.
33. Why did J. J. Thomson reason that electrons must be a part of the atoms of all elements?
a. Cathode rays are negatively-charged particles.
b. Cathode rays can be deflected by magnets.
c. An electron is 2000 times lighter than a hydrogen atom.
d. Charge-to-mass ratio of electrons was the same, regardless of the gas used.
34. All atoms are $\qquad$ .
a. positively charged, with the number of protons exceeding the number of electrons
b. negatively charged, with the number of electrons exceeding the number of protons
c. neutral, with the number of protons equaling the number of electrons
d. neutral, with the number of protons equaling the number of electrons, which is equal to the number of neutrons
35. As a consequence of the discovery of the nucleus by Rutherford, which model of the atom is thought to be true?
a. Protons, electrons, and neutrons are evenly distributed throughout the volume of the atom.
b. The nucleus is made of protons, electrons, and neutrons.
c. Electrons are distributed around the nucleus and occupy almost all the volume of the atom.
d. The nucleus is made of electrons and protons.
36. The nucleus of an atom is $\qquad$ .
a. the central core and is composed of protons and neutrons
b. positively charged and has more protons than neutrons
c. negatively charged and has a high density
d. negatively charged and has a low density
37. What does the number 84 in the name krypton- 84 represent?
a. the atomic number
c. the sum of the protons and electrons
b. the mass number
d. twice the number of protons
38. Isotopes of the same element have different $\qquad$
a. positions on the periodic table
c. atomic numbers
b. chemical behavior
d. mass numbers
39. In which of the following sets is the symbol of the element, the number of protons, and the number of electrons given correctly?
a. In, 49 protons, 49 electrons
c. Cs, 55 protons, 132.9 electrons
b. $\mathrm{Zn}, 30$ protons, 60 electrons
d. F, 19 protons, 19 electrons
40. Using the periodic table, determine the number of neutrons in ${ }^{16} \mathrm{O}$.
a. 4
b. 8
c. 16
d. 24
41. Which of the following compounds contains the $\mathrm{Mn}^{3+}$ ion?
a. MnS
b. $\mathrm{MnBr}_{2}$
c. $\mathrm{Mn}_{2} \mathrm{O}_{3}$
d. MnO
42. Which of the following formulas represents an ionic compound?
a. $\mathrm{CS}_{2}$
b. $\mathrm{BaI}_{2}$
c. $\mathrm{N}_{2} \mathrm{O}_{4}$
d. $\mathrm{PCl}_{3}$
43. Which of the following correctly represents an ion pair and the ionic compound the ions form?
a. $\mathrm{Ca}^{2-}, \mathrm{F}^{-} ; \mathrm{CaF}_{2}$
b. $\mathrm{Na}^{+}, \mathrm{Cl}^{-} ; \mathrm{NaCl}_{2}$
c. $\mathrm{Ba}^{2+}, \mathrm{O}^{2-} ; \mathrm{Ba}_{2} \mathrm{O}_{2}$
d. $\mathrm{Pb}^{4+}, \mathrm{O}^{2-} ; \mathrm{Pb}_{2} \mathrm{O}_{4}$
$\qquad$ 44. Which set of chemical name and chemical formula for the same compound is correct?
a. iron(II) oxide, $\mathrm{Fe}_{2} \mathrm{O}_{3}$
c. $\operatorname{tin}(\mathrm{IV})$ bromide, $\mathrm{SnBr}_{4}$
b. aluminum fluorate, $\mathrm{AlF}_{3}$
d. potassium chloride, $\mathrm{K}_{2} \mathrm{Cl}_{2}$
45. What is the correct formula for potassium sulfite?
a. $\mathrm{KHSO}_{3}$
b. $\mathrm{KHSO}_{4}$
c. $\mathrm{K}_{2} \mathrm{SO}_{3}$
d. $\mathrm{K}_{2} \mathrm{SO}_{4}$
46. Which set of chemical name and chemical formula for the same compound is correct?
a. ammonium sulfite, $\left(\mathrm{NH}_{4}\right)_{2} \mathrm{~S}$
c. lithium carbonate, $\mathrm{LiCO}_{3}$
b. iron(III) phosphate, $\mathrm{FePO}_{4}$
d. magnesium dichromate, $\mathrm{MgCrO}_{4}$
47. Molecular compounds are usually $\qquad$ .
a. composed of two or more transition elements
b. composed of positive and negative ions
c. composed of two or more nonmetallic elements
d. exceptions to the law of definite proportions
48. Which of the following shows both the correct formula and correct name of an acid?
a. $\mathrm{HClO}_{2}$, chloric acid
c. $\mathrm{H}_{3} \mathrm{PO}_{4}$, phosphoric acid
b. $\mathrm{HNO}_{2}$, hydronitrous acid
d. HI, iodic acid
49. What is the name of $\mathrm{H}_{2} \mathrm{SO}_{3}$ ?
a. hyposulfuric acid
c. sulfuric acid
b. hydrosulfuric acid
d. sulfurous acid
50. What is the formula for phosphoric acid?
a. $\mathrm{H}_{2} \mathrm{PO}_{3}$
b. $\mathrm{H}_{3} \mathrm{PO}_{4}$
c. $\mathrm{HPO}_{2}$
d. $\mathrm{HPO}_{4}$
51. What is the correct name for the compound $\mathrm{CoCl}_{2}$ ?
a. cobalt(I) chlorate
c. cobalt(II) chlorate
b. cobalt(I) chloride
d. cobalt(II) chloride
52. What is the correct formula for calcium dihydrogen phosphate?
a. $\mathrm{CaH}_{2} \mathrm{PO}_{4}$
b. $\mathrm{Ca}_{2} \mathrm{H}_{2} \mathrm{PO}_{4}$
c. $\mathrm{Ca}\left(\mathrm{H}_{2} \mathrm{PO}_{4}\right)_{2}$
d. $\mathrm{Ca}\left(\mathrm{H}_{2} \mathrm{HPO}_{4}\right)_{2}$
53. Which of the following is the correct name for $\mathrm{N}_{2} \mathrm{O}_{5}$ ?
a. nitrous oxide
c. nitrogen dioxide
b. dinitrogen pentoxide
d. nitrate oxide
54. What particle is emitted in alpha radiation?
a. electron
c. helium nucleus
b. photon
d. hydrogen nucleus
55. The least penetrating form of radiation is $\qquad$ .
a. beta radiation
c. alpha radiation
b. gamma radiation
d. X rays
56. When radium-226 (atomic number 88 ) decays by emitting an alpha particle, it becomes $\qquad$ .
a. polonium-222
c. radium-222
b. polonium- 224
d. radon-222
57. What particle is needed to complete the following nuclear equation?
${ }_{25}^{56} \mathrm{Mn} \rightarrow$ $\qquad$ $+{ }_{-1}^{0} \mathrm{e}$
a. $\quad{ }_{27}^{56} \mathrm{Co}$
b. ${ }_{25}^{27} \mathrm{Mn}$
c. $\quad{ }_{26}^{56} \mathrm{Fe}$
d. ${ }_{24}^{58} \mathrm{Cr}$
58. A reaction in which small nuclei combine to form a heavier nucleus is called $\qquad$ .
a. fission
c. background radiation
b. a chemical reaction
d. fusion
59. How many energy sublevels are in the second principal energy level?
a. 1
b. 2
c. 3
d. 4
60. What is the maximum number of $f$ orbitals in any single energy level in an atom?
a. 1
b. 3
c. 5
d. 7
61. What is the maximum number of electrons in the second principal energy level?
a. 2
b. 8
c. $\quad 18$
d. 32
62. When an electron moves from a lower to a higher energy level, the electron $\qquad$ .
a. always doubles its energy
b. absorbs a continuously variable amount of energy
c. absorbs a quantum of energy
d. moves closer to the nucleus
63. If the spin of one electron in an orbital is clockwise, what is the spin of the other electron in that orbital?
a. zero
c. counterclockwise
b. clockwise
d. both clockwise and counterclockwise
64. What types of atomic orbitals are in the third principal energy level?
a. $\quad s$ and $p$ only
b. $\quad p$ and $d$ only
c. $s, p$, and $d$ only
d. $s, p, d$, and $f$
65. What is the electron configuration of potassium?
a. $\quad 1 s^{2} 2 s^{2} 2 p^{2} 3 s^{2} 3 p^{2} 4 s^{1}$
b. $\quad 1 s^{2} 2 s^{2} 2 p^{10} 3 s^{2} 3 p^{3}$
c. $\quad 1 s^{2} 2 s^{2} 3 s^{2} 3 p^{6} 3 d^{1}$
d. $1 s^{2} 2 s^{2} 2 p^{6} 3 s^{2} 3 p^{6} 4 s^{1}$
66. If three electrons are available to fill three empty $2 p$ atomic orbitals, how will the electrons be distributed in the three orbitals?
a. one electron in each orbital
b. two electrons in one orbital, one in another, none in the third
c. three in one orbital, none in the other two
d. Three electrons cannot fill three empty $2 p$ atomic orbitals.
67. How many unpaired electrons are in a sulfur atom (atomic number 16)?
a. 0
b. 1
c. 2
d. 3
68. How many half-filled orbitals are in a bromine atom?
a. 1
b. 2
c. 3
d. 4
69. Which color of visible light has the shortest wavelength?
a. yellow
c. blue
b. green
d. violet
70. Which of the following electromagnetic waves have the highest frequencies?
a. ultraviolet light waves
c. microwaves
b. X-rays
d. gamma rays
71. Emission of light from an atom occurs when an electron $\qquad$ .
a. drops from a higher to a lower energy level
b. jumps from a lower to a higher energy level
c. moves within its atomic orbital
d. falls into the nucleus
72. The atomic emission spectra of a sodium atom on Earth and of a sodium atom in the sun would be $\qquad$ .
a. the same
b. different from each other
c. the same as those of several other elements
d. the same as each other only in the ultraviolet range
73. Which of the following quantum leaps would be associated with the greatest energy of emitted light?
a. $n=5$ to $n=1$
b. $n=4$ to $n=5$
c. $\mathrm{n}=2$ to $\mathrm{n}=5$
d. $n=5$ to $n=4$
74. How do the energy differences between the higher energy levels of an atom compare with the energy differences between the lower energy levels of the atom?
a. They are greater in magnitude than those between lower energy levels.
b. They are smaller in magnitude than those between lower energy levels.
c. There is no significant difference in the magnitudes of these differences.
d. No answer can be determined from the information given.
75. Which scientist developed the quantum mechanical model of the atom?
a. Albert Einstein
c. Niels Bohr
b. Erwin Schrodinger
d. Ernest Rutherford
$\qquad$ 76. The ground state electron configuration of Ga is $\qquad$ .
a. $\quad 1 \mathrm{~s}^{2} 2 \mathrm{~s}^{2} 3 \mathrm{~s}^{2} 3 \mathrm{p}^{6} 4 \mathrm{~s}^{2} 3 \mathrm{~d}^{10} 4 \mathrm{p}^{1}$
b. $1 s^{2} 2 s^{2} 2 p^{6} 3 s^{2} 3 p^{6} 4 s^{2} 4 d^{10} 4 p^{1}$
c. $1 s^{2} 2 s^{2} 2 p^{6} 3 s^{2} 3 p^{6} 4 s^{2} 3 d^{10} 4 p^{1}$
d. $1 s^{2} 2 s^{2} 2 p^{6} 3 s^{2} 3 p^{6} 4 s^{2} 3 d^{104 d^{1}}$
e. $[\mathrm{Ar}] 4 \mathrm{~s}^{2} 3 \mathrm{~d}^{11}$
77. The ground-state electron configuration of $\qquad$ is $[\mathrm{Ar}] 4 \mathrm{~s}^{2} 3 \mathrm{~d}^{4}$.
a. V
b. Mn
c. Fe
d. Cr
e. K
$\qquad$ 78. Which electron configuration represents a violation of Hund's rule for an atom in its ground state?
a.


b.


c.

e.


79. The noble gas electron configuration of argon, element 18 , is $\qquad$ .
a. $[\mathrm{Ne}] 3 \mathrm{~s}^{4}$
b. $[\mathrm{Ar}] 3 \mathrm{~s}^{2} 3 \mathrm{p}^{2}$
c. $[\mathrm{Ne}] 3 \mathrm{~s}^{2} 3 \mathrm{p}^{6}$
d. $[\mathrm{He}] 2 \mathrm{~s}^{4} 2 \mathrm{p}^{10}$
e. $[\mathrm{He}] 3 \mathrm{~s}^{4}$
80. In the following diagram of a wave

a. (a) is amplitude and (b) is wavelength
b. (a) is frequency and (b) is amplitude
c. (a) is wavelength and (b) is frequency
d. (a) is wavelength and (b) is amplitude
81. Using the figure below, which radiation has the longest wavelength?

a. Gamma rays
b. X rays
c. Ultraviolet
d. Microwave
82. The orbital diagram for a ground-state nitrogen atom is

a. A
b. B
c. C
d. D
83. 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. $\quad \mathrm{K}^{+}, \mathrm{Ca}^{2+}, \mathrm{Sc}^{3+}, \mathrm{S}^{2-}, \mathrm{P}^{3-}$
b. $\quad \mathrm{P}^{3-}, \mathrm{S}^{2-}, \mathrm{K}^{+}, \mathrm{Ca}^{2+}, \mathrm{Sc}^{3+}$
c. $\quad \mathrm{Sc}^{3+}, \mathrm{Ca}^{2+}, \mathrm{K}^{+}, \mathrm{P}^{3-}, \mathrm{S}^{2-}$
d. $\quad \mathrm{Sc}^{3+}, \mathrm{Ca}^{2+}, \mathrm{K}^{+}, \mathrm{S}^{2-}, \mathrm{P}^{3-}$
84. What element in the second period has the largest atomic radius?
a. lithium
c. carbon
b. neon
d. potassium
85. Which of the following has the smallest atomic radius?
a. bromine
c. sulfur
b. selenium
d. oxygen
86. Which group of elements are the most electronegative?
a. Transition metals
c. Noble gases
b. Alkali metals
d. Halogens
87. What is the element with the lowest electronegativity value?
a. helium
c. cesium
b. calcium
d. fluorine

88. Atomic number increases $\longrightarrow$

The chart above shows the relationship between the first ionization energy and the increase in atomic number.
The letter on the chart for the alkali family of elements is
a. Z
c. X
b. Y
d. W
89. Which element would have a higher tendency to attract electrons.
a. Fluorine
b. Selenium
90.

Barium is a larger atom than Calcium. Which of the following is the BEST explanation why this occurs?
a. Barium only has two valence
electrons
b. Barium has two more energy levels than calcium
91. Which statement is true about electronegativity?
a. Electronegativity generally increases as you move from top to bottom within a group.
b. Electronegativity is the ability of an anion to attract another anion.
c. Electronegativity generally increases from left to right across a period.
d. Electronegativity generally is higher for metals than for nonmetals.
92. Which of the following factors contributes to the decrease in ionization energy within a group in the periodic table as the atomic number increases?
a. fewer electrons in the highest occupied energy level
b. increase in number of protons
c. increase in size of the nucleus
d. increase in atomic size
93. Atomic size generally $\qquad$ .
a. decreases as you move from left to right across a period
b. increases as you move from left to right across a period
c. decreases as you move from top to bottom within a group
d. remains constant within a period
94. How does shielding affect the relative atomic size of element in the same period?
a. An increase in the degree of shielding
c. Shielding has no effect on relative due to an increase attraction to the nucleus causes a decrease in atomic size.
b. An increase in the degree of shielding d. Shielding has effect on the relative due to an increase attraction to the nucleus causes an increase in atomic atomic size within a period.
size.
95. Which of the following elements has the smallest atomic radius?
a. chlorine
c. bromine
b. sulfur
d. selenium
96. Which of the following sets of symbols represents isotopes of the same element?
a. $\quad{ }_{42}^{91} \mathrm{~J} \quad{ }_{42}^{92} \mathrm{~J} \quad{ }_{40}^{93} \mathrm{~J}$
b. $\quad{ }_{38}^{84} \mathrm{M} \quad{ }_{38}^{86} \mathrm{M}{ }_{38}^{87} \mathrm{M}$
c. $\quad{ }_{59}^{138} \mathrm{Q}{ }_{55}^{133} \mathrm{Q}{ }_{54}^{133} \mathrm{Q}$
d. $\quad{ }_{19}^{50} \mathrm{~L} \quad{ }_{20}^{50} \mathrm{~L} \quad{ }_{21}^{50} \mathrm{~L}$

## Multiple Response

Identify one or more choices that best complete the statement or answer the question.
97. A anion:
a. ends in -ide
c. positive charge
b. is a nonmetal
d. gains electrons
98. A molecule:
a. is a covalent compound
c. is composed of metals and nonmetals
b. is composed of nonmetals
d. does not conduct electricity
99. Which of the following acids start with hydro-?
a. HF
b. $\mathrm{H}_{2} \mathrm{SO}_{4}$
c. HCl
d. $\mathrm{H}_{2} \mathrm{SO}_{3}$
$\qquad$ 100. Ionic compounds are:
a. formula units
c. electrically neutral
b. good conductors of electricity
d. composed of nonmetals

Fall Midterm Practice Test-Fall 2017
Answer Section

## MATCHING

1. ANS: F OBJ: 2.1.3
2. ANS: A OBJ: 2.2.1
3. ANS: E OBJ: 2.2.2
4. ANS: B

OBJ: 2.4.1
5. ANS: D

OBJ: 2.4.1
6. ANS: E OBJ: 4.3.1
7. ANS: A OBJ: 4.3.1
8. ANS: C

OBJ: 4.3.1
9. ANS: D

OBJ: 4.3.3
10. ANS: B

OBJ: 4.3.3
11. ANS: A OBJ: 5.1.2
12. ANS: F OBJ: 5.1.3
13. ANS: D OBJ: 5.1.3
14. ANS: B OBJ: $5.1 .3 \mid 5.2 .1$
15. ANS: C OBJ: 5.2.1
16. ANS: E OBJ: 5.2.1

DIF: L1

DIF: L2

PTS: 1
PTS: 1

PTS: 1

PTS: 1
STA: Ch. 6
PTS: 1
DIF: L1

DIF: L1

DIF: L1

DIF: L1

DIF: L1

DIF: L1

DIF: L1

DIF: L1

DIF: L1

DIF: L1

DIF: L1

DIF: L1

DIF: L1

DIF: L1
DIF: L1

DIF: L1

PTS: 1
STA: Ch. 8
PTS: 1
STA: Ch. 8

PTS: 1
STA: Ch.11.c
PTS: 1
STA: Ch.1.e
PTS: 1
STA: Ch.1.a
PTS: 1
STA: Ch.1.a
PTS: 1

PTS: 1
STA: Ch.1.e
PTS: 1
STA: Ch.1.e
PTS: 1
STA: Ch.1.j
PTS: 1
STA: Ch.1.j
PTS: 1
STA: Ch.1.e
PTS: 1
STA: Ch.1.e

## MULTIPLE CHOICE

17. ANS: B OBJ: 1.3.2
18. ANS: D OBJ: 1.3.2
19. ANS: B

OBJ: 2.1.1
20. ANS: C OBJ: 2.1.1
21. ANS: D OBJ: 2.1.2
22. ANS: C OBJ: 2.1.4
23. ANS: B

OBJ: 2.2.1
24. ANS: A

OBJ: 2.2.2
25. ANS: D OBJ: 2.2.3
26. ANS: C OBJ: 2.4.1
27. ANS: C

OBJ: 2.4.1
28. ANS: D

OBJ: 2.4.1
29. ANS: A OBJ. 2.1.4|2.4.1|2.4.
30. ANS: A
OBJ: 2.1.4 | 2.4 .2
31. ANS: A PTS: 1

OBJ: 4.1.1|4.1.2
32. ANS: C OBJ: 4.1.2
33. ANS: D

OBJ: 4.2.1
34. ANS: C

OBJ: 4.2.1
35. ANS: C

OBJ: 4.2.2
36. ANS: A

OBJ: 4.2.2
37. ANS: B

OBJ: 4.3.1
38. ANS: D

OBJ: 4.3.1
39. ANS: A

OBJ: 4.2.1|4.3.1
40. ANS: B

OBJ: 4.3.1|4.3.4
41. ANS: C

OBJ: 9.2.1
42. ANS: B

OBJ: 9.2.1
2.4.2

PTS: 1 DIF: L1
PTS: 1 DIF: L1
PTS: 1 DIF: L1
PTS: 1 DIF: L2
PTS: 1
DIF: L2
STA: Ch. 6
PTS: 1
STA: Ch. 6
PTS: 1
DIF: L2
PTS: 1
DIF: L2
PTS: 1
DIF: L2
PTS: 1
DIF: L2
DIF: L2
DIF: L2
DIF: L1
DIF: L2
DIF: L2
STA: Ch.1.h
PTS: 1
STA: Ch. 1
PTS: 1
STA: Ch.1.h
PTS: 1
STA: Ch.1.e
PTS: 1 DIF: L1
STA: Ch.1.a|Ch.11.c
PTS: 1 DIF: L1
STA: Ch.11.c
PTS: 1
STA: Ch.1.a
PTS: 1
STA: Ch.1.a
PTS: 1
STA: Ch. 2
PTS: 1
STA: Ch. 2

REF: p. 39
REF: p. 39
REF: p. 40
REF: p. 42
REF: p. 40
REF: p. 45
REF: p. 46
REF: p. 53
REF: p. 53
REF: p. 53
REF: p. 54
REF: p. 54
REF: p. 101 | p. 102
REF: p. 102
REF: p. 105
REF: p. 106
REF: p. 108
REF: p. 107 | p. 108
REF: p. 111
REF: p. 112 | p. 113
REF: p. 110
REF: p. 111
REF: p. 262 | p. 263
REF: p. 262

| 43. | ANS: A <br> OBJ: 9.2.1 | $\begin{aligned} & \text { PTS: } \\ & \text { STA: } \end{aligned}$ | $\begin{aligned} & 1 \\ & \text { Ch. } 2 \end{aligned}$ | DIF: | L2 | REF: | p. 262 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 44. | ANS: C | PTS: |  | DIF: | L2 | REF: | p. 261 \| p. 262 |
|  | OBJ: 9.2.1 | STA | Ch. 2 |  |  |  |  |
| 45. | ANS: C | PTS: | 1 | DIF: | L2 | REF: | p. 257 \| p. 261 | p. 262 |
|  | OBJ: 9.2.2 | STA | Ch. 2 |  |  |  |  |
| 46. | ANS: B | PTS: | 1 | DIF: | L2 | REF: | p. 264 \| p. 265 |p. 266 |
|  | OBJ: 9.1.3\|9.2.2 | STA | Ch. 2 |  |  |  |  |
| 47. | ANS: C | PTS: | 1 | DIF: | L1 | REF: | p. 268 |
|  | OBJ: 9.3.1\|9.3.2 | STA | Ch.2.a |  |  |  |  |
| 48. | ANS: C | PTS: | 1 | DIF: | L2 | REF: | p. 272 |
|  | OBJ: 9.4.1 | STA | Ch. 5 |  |  |  |  |
| 49. | ANS: D | PTS: | 1 | DIF: | L2 | REF: | p. 272 |
|  | OBJ: 9.4.1 | STA | Ch. 5 |  |  |  |  |
| 50. | ANS: B | PTS: | 1 | DIF: | L2 | REF: | p. 272 |
|  | OBJ: 9.4.2 | STA | Ch. 5 |  |  |  |  |
| 51. | ANS: D | PTS: |  | DIF: | L2 | REF: | p. 261 \| p. 262 | p. 277 |
|  | OBJ: 9.2.1\|9.5.2 | STA | Ch. 5 |  |  |  |  |
| 52. | ANS: C | PTS: | 1 | DIF: | L3 | REF: | p. 257 \| p. 264 |
|  | OBJ: 9.2.2\| 9.5.2 | STA | Ch. 5 |  |  |  |  |
| 53. | ANS: B | PTS: | 1 | DIF: | L2 | REF: | p. 269 \| p. 277 |
|  | OBJ: 9.3.2\|9.5.3 | STA | Ch.2.b\|Ch. 5 |  |  |  |  |
| 54. | ANS: C | PTS: | 1 | DIF: | L1 | REF: | p. 800 |
|  | OBJ: 25.1.2 | STA | Ch.11.d |  |  |  |  |
| 55. | ANS: C | PTS: | 1 | DIF: | L1 | REF: | p. 802 |
|  | OBJ: 25.1.2 | STA | Ch.11.e |  |  |  |  |
| 56. | ANS: D | PTS: | 1 | DIF: |  | REF: | p. 800 \| p. 804 |
|  | OBJ: 25.1.2\|25.2.1 |  |  | STA: | Ch.11.d |  |  |
| 57. | ANS: C | PTS: | 1 | DIF: | L3 | REF: | p. 803 \| p. 804 |
|  | OBJ: 25.2.1 | STA | Ch.11.d |  |  |  |  |
| 58. | ANS: D | PTS: | 1 | DIF: | L1 | REF: | p. 813 |
|  | OBJ: 25.3.3 | STA | Ch.11.b |  |  |  |  |
| 59. | ANS: B | PTS: | 1 | DIF: | L2 | REF: | p. 131 |
|  | OBJ: 5.1.3 | STA | Ch.1.i |  |  |  |  |
| 60. | ANS: D | PTS: | 1 | DIF: | L2 | REF: | p. 131 \| p. 132 |
|  | OBJ: 5.1.3 | STA | Ch.1.i |  |  |  |  |
| 61. | ANS: B | PTS: | 1 | DIF: | L3 | REF: | p. 132 |
|  | OBJ: 5.1.3 | STA | Ch.1.i |  |  |  |  |
| 62. | ANS: C | PTS: | 1 | DIF: | L3 | REF: | p. 128 |
|  | OBJ: 5.1.3 | STA | Ch.1.i |  |  |  |  |
| 63. | ANS: C | PTS: | 1 | DIF: | L1 | REF: | p. 134 |
|  | OBJ: 5.2.1 | STA | Ch.1.i |  |  |  |  |
| 64. | ANS: C | PTS: | 1 | DIF: | L2 | REF: | p. 131 |
|  | OBJ: 5.2.1 | STA | Ch.1.i |  |  |  |  |
| 65. | ANS: D | PTS: | 1 | DIF: | L2 | REF: | p. 133 \|p. 134 |p. 135 |
|  | OBJ: 5.2.1 | STA | Ch.1.g |  |  |  |  |
| 66. | ANS: A | PTS: | 1 | DIF: | L3 | REF: | p. 134 |
|  | OBJ: 5.2.1 | STA | Ch.1.g\|Ch.1.i |  |  |  |  |


| 67. | $\begin{array}{ll} \text { ANS: } & \text { C } \\ \text { OBJ: } & 5.2 .1 \end{array}$ | PTS: 1 <br> STA: Ch.1.g | DIF: | L3 | REF: | p. 133 \| p. 134 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 68. | ANS: A <br> OBJ: 5.2.1 | PTS: 1 <br> STA: Ch.1.g | DIF: | L3 | REF: | p. 133 \|p. 134 |
| 69. | $\begin{array}{ll} \text { ANS: } & \text { D } \\ \text { OBJ: } & 5.3 .1 \end{array}$ | $\begin{aligned} & \text { PTS: } 1 \\ & \text { STA: Ch.1.j } \end{aligned}$ | DIF: | L2 | REF: | p. 139 |
| 70. | ANS: D <br> OBJ: 5.3.1 | PTS: 1 <br> STA: Ch.1.j | DIF: | L2 | REF: | p. 139 |
| 71. | ANS: A <br> OBJ: 5.3.2 | PTS: 1 <br> STA: Ch.1.j | DIF: | L2 | REF: | p. 141 |
| 72. | ANS: A <br> OBJ: 5.3.2\|5.3.3 | PTS: 1 <br> STA: Ch.1.j | DIF: | L2 | REF: | p. 141 |
| 73. | $\begin{array}{ll} \text { ANS: } & \text { A } \\ \text { OBJ: } & 5.3 .3 \end{array}$ | $\begin{aligned} & \text { PTS: } 1 \\ & \text { STA: Ch.1.j } \end{aligned}$ | DIF: | L2 | REF: | p. 143 |
| 74. | ANS: B <br> OBJ: 5.3.3 | PTS: 1 <br> STA: Ch.1.j | DIF: | L3 | REF: | p. 143 |
| 75. | ANS: B <br> OBJ: 5.3.4 | PTS: 1 <br> STA: Ch.1.i | DIF: | L1 | REF: | p. 130 |
| 76. | ANS: C <br> OBJ: 6.8; G2 | PTS: 1 | DIF: | 2 | REF: | Page Ref: 6.8 |
| 77. | ANS: D <br> OBJ: 6.8; G2 | PTS: 1 | DIF: | 2 | REF: | Page Ref: 6.8 |
| 78. | ANS: B <br> OBJ: 6.8; G2 | PTS: 1 | DIF: | 2 | REF: | Page Ref: 6.8 |
| 79. | ANS: C <br> OBJ: 6.9; G2 | PTS: 1 | DIF: | 2 | REF: | Page Ref: 6.8 |
| 80. | ANS: D <br> OBJ: EK.1.D. 3 | PTS: 1 | DIF: | Easy | REF: | Section: 7.1 |
| 81. | $\begin{aligned} & \text { ANS: D } \\ & \text { OBJ: EK.1.D. } 3 \end{aligned}$ | PTS: 1 | DIF: | Medium | REF: | Section: 7.1 |
| 82. | ANS: A <br> OBJ: EK.1.B. 2 | PTS: 1 | DIF: | Medium | REF: | Section: 7.8 |
| 83. | ANS: D | PTS: 1 |  |  |  |  |
| 84. | ANS: A OBJ: 6.3.1 | PTS: 1 <br> STA: Ch.1.a | DIF: | L2 | REF: | p. 171 |
| 85. | ANS: D | PTS: 1 |  |  |  |  |
| 86. | ANS: D | PTS: 1 |  |  |  |  |
| 87. | ANS: C <br> OBJ: 6.3.3 | PTS: 1 <br> STA: Ch.1.c | DIF: | L1 | REF: | p. 177 |
| 88. | ANS: D $1 \mathrm{c}$ |  |  |  |  |  |
|  | PTS: 1 | STA: 1c |  |  |  |  |
| 89. | ANS: A | PTS: 1 |  |  |  |  |
| 90. | ANS: B | PTS: 1 |  |  |  |  |
| 91. | ANS: C OBJ: 6.3.3 | PTS: 1 <br> STA: Ch.1.c | DIF: | L2 | REF: | p. 177 |

92. ANS: D PTS: 1

OBJ: 6.3.1|6.3.3 STA: Ch.1.c
93. ANS: A

OBJ: 6.3.1
94. ANS: C
95. ANS: A OBJ: 6.3.1
96. ANS: B

OBJ: 4.3.1

PTS: 1
STA: Ch.1.a
PTS: 1
PTS: 1
STA: Ch.1.a
PTS: 1
STA: Ch.11.c

DIF: L2
REF: p. 174
DIF: L2
REF: p. 171

DIF: L3
REF: p. 171 | p. 175
DIF: L3
REF: p. 112 | p. 113

## MULTIPLE RESPONSE

97. ANS: A, B, D PTS: 1
98. ANS: A, B, D PTS: 1
99. ANS: A, C PTS: 1
100. ANS: A, B, C PTS: 1
