Exam

Name_____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) How do buffers work? 1) _____
A) They soak up extra acid and base.
B) They monitor the blood pH.
C) They convert H^+ and OH^- to water.
D) They accept and release H^+.
E) They accept and release OH^-.

Answer: D
Explanation: A)
B)
C)
D)
E)

2) Atoms or molecules that have gained or lost electrons are called 2) _____
A) acids. B) buffers. C) ions. D) covalent. E) bases.

Answer: C
Explanation: A)
B)
C)
D)
E)

3) Carbon-14 is often used for carbon dating, where scientists measure the rate of carbon-14 decay to determine the age of items. Carbon-14 contains six protons and eight neutrons. During the process of carbon-14 decay, one of its eight neutrons becomes a proton and an electron is emitted. Which of the following is the best explanation of what has occurred? 3) _____
A) An ionic bond has formed.
B) The resulting atom is now a different element because the number of protons has changed.
C) The resulting atom is still carbon-14.
D) The resulting atom has a more stable nucleus.

Answer: B
Explanation: A)
B)
C)
D)

4) In general, a substance that carries an electric charge can dissolve in water. Given this fact, which of the following would most likely NOT dissolve in water? 4) _____
A) Nonpolar molecules B) Ionic compounds
C) NaCl D) Polar covalent molecules

Answer: A
Explanation: A)
B)
C)
D)

5) You drop a handful of common table salt into a glass of water. Which of the following best describes what is happening inside the glass at the molecular level? 5) _____

A) Water and sodium form a covalent bond.
B) The positively charged hydrogen ends of the water molecules are attracted to chloride ions.
C) Sodium and chloride ions form a covalent bond.
D) The positively charged hydrogen ends of the water molecules are attracted to sodium ions.

Answer: B
Explanation: A)
B)
C)
D)

6) Your friend does a belly flop into a swimming pool. The stinging pain he feels is most likely due to the 6) _____

A) surface tension of water (caused by the large number of hydrogen bonds that form between water molecules).
B) pH of the water.
C) fact that water is a good solvent.
D) hydrophobic nature of your friend's skin.

Answer: A
Explanation: A)
B)
C)
D)

7) Which of the following properties of water enable(s) it to function as a regulator of temperature for living organisms? (Hint: Think about what happens when you are sunbathing.) 7) _____

A) High specific heat and low heat of vaporization
B) High specific heat and high heat of vaporization
C) High specific heat
D) Low specific heat
E) High heat of vaporization

Answer: A
Explanation: A)
B)
C)
D)
E)

8) Which of the following best explains why a particular atom may not form compounds easily? 8) _____

A) The atom has no electrons.
B) The atom has an uneven number of protons.
C) The atom's outer energy shells are completely full.
D) The atom has seven electrons in its outer shell.

Answer: C
Explanation: A)
B)
C)
D)

9) The specific heat of water is 10 times greater than that of iron. You place a metal pot full of water on the stove to heat it up. You touch the metal handle of the pot when the water is still only lukewarm. Which of the following best describes what happens? 9) _____

A) You find that the handle is cooler than the water in the pot.
B) You find that both the water and the handle are the same temperature.
C) You determine that metal pots full of water produce acids and bases.
D) You burn your finger and pull your hand away from the hot metal handle.

Answer: D
Explanation: A)
B)
C)
D)

10) Iron is an important element in human body cells. If iron has an atomic number of 26, what does this tell you about this element? 10) _____

A) An iron atom is unable to become an isotope.
B) An iron atom has 13 electrons and 13 protons.
C) An iron atom has 26 protons.
D) An iron atom has 13 protons and 13 neutrons.

Answer: C
Explanation: A)
B)
C)
D)

11) Unlike a rock, a reptile can sit in the hot sunshine without its body temperature soaring quickly. This is because the water in its body 11) _____

A) has a high specific heat.
B) is a poor solvent.
C) is a good solvent.
D) has a low specific heat.

Answer: A
Explanation: A)
B)
C)
D)

12) Free radicals contain unpaired electrons in their outermost energy shell, so they react readily with other atoms or molecules to reach a more stable state. Which of the following could potentially be a free radical? 12) _____

A) Helium (atomic number 2)
B) Neon (atomic number 10)
C) Magnesium (atomic number 12)
D) Fluorine (atomic number 9)

Answer: D
Explanation: A)
B)
C)
D)

13) Water moves through a plant because of the property of 13) _____

A) high heat of vaporization. B) high heat of fusion.
C) high specific heat. D) cohesion.

Answer: D
Explanation: A)
B)
C)
D)

14) Which four elements make up approximately 96% of living matter? 14) _____

A) Oxygen, hydrogen, calcium, sodium
B) Carbon, phosphorus, hydrogen, sulfur
C) Carbon, hydrogen, nitrogen, oxygen
D) Carbon, sodium, chlorine, magnesium
E) Carbon, oxygen, calcium, sulfur

Answer: C
Explanation: A)
B)
C)
D)
E)

15) An atom of nitrogen attracts electrons more strongly than an atom of hydrogen. In an ammonia molecule (NH_3), which of the following best describes the electrical charge of the individual atoms? 15) _____

A) The nitrogen becomes neutral.
B) The nitrogen is slightly positive.
C) The nitrogen is slightly more negative.
D) The hydrogens are strongly negative.
E) Charges balance out and none of the atoms has any charge.

Answer: C
Explanation: A)
B)
C)
D)
E)

16) A neutral solution 16) _____

A) has equal amounts of H^+ and OH^-.
B) has no H^+.
C) has a pH of 0.
D) has no OH^-.
E) is hydrophobic.

Answer: A
Explanation: A)
B)
C)
D)
E)

17) The part of the atom that has the greatest biological interest and interactions with other atoms is the 17) _____
A) innermost electron shell. B) electron.
C) proton. D) neutron.

Answer: B
Explanation: A)
B)
C)
D)

18) Which of the following is the densest? 18) _____
A) Steam B) Liquid water C) Ice

Answer: B
Explanation: A)
B)
C)

19) A substance with specific properties that cannot be broken down or converted into another substance is called a(n) 19) _____
A) ion.
B) compound.
C) mixture.
D) element.
E) molecule.

Answer: D
Explanation: A)
B)
C)
D)
E)

20) Polar molecules 20) _____
A) have an overall negative electric charge.
B) are always ions.
C) have an equal distribution of electric charge.
D) have an unequal distribution of electric charge.
E) have an overall positive electric charge.

Answer: D
Explanation: A)
B)
C)
D)
E)

21) Water molecules are cohesive because they 21) _____

A) form hydrogen bonds.
B) make up 60% to 90% of an organism's body weight.
C) stick to other polar molecules.
D) contain protons.
E) are repelled by nonpolar molecules.

Answer: A
Explanation: A)
B)
C)
D)
E)

22) Which of the following results from an unequal sharing of electrons between atoms? 22) _____

A) Nonpolar covalent bond
B) Polar covalent bond
C) Ionic bond
D) Hydrogen bond
E) Electron-proton interaction

Answer: B
Explanation: A)
B)
C)
D)
E)

23) What is meant by the statement that water has a high specific heat? 23) _____

A) It grows hot quickly.
B) Water can heat up to only a certain temperature.
C) It can absorb a lot of energy without changing temperature.
D) The boiling point of water is low.
E) Water freezes easily.

Answer: C
Explanation: A)
B)
C)
D)
E)

24) What does H-O-H represent? 24) _____

A) Molecule of water
B) Ionic bonding of water
C) Atom of water
D) Mixture including water

Answer: A
Explanation: A)
B)
C)
D)

25) For an atom to achieve maximum stability and become chemically inert, what must occur? 25) _____

A) The number of electrons must equal the number of protons.
B) Ionization occurs.
C) Electron pairs are shared.
D) Its outermost energy shell must be completely filled with electrons.

Answer: D
Explanation: A)
B)
C)
D)

26) Scientists recommend a diet rich in antioxidants to stay healthy. What occurs at the atomic level to explain this recommendation? 26) _____

A) Antioxidants are inert and do not interact with free radicals.
B) Antioxidants prevent free radicals from attacking other atoms or molecules.
C) Antioxidants cause an increase in pH, which is necessary for neutrality in cells.
D) Antioxidants steal electrons, which gives cells extra energy.

Answer: B
Explanation: A)
B)
C)
D)

27) The element carbon has atomic number 6. Carbon most likely 27) _____

A) shares two electrons with another atom.
B) forms four covalent bonds.
C) donates two electrons to another atom.
D) forms ionic bonds with other atoms.

Answer: B
Explanation: A)
B)
C)
D)

28) Phosphorus has an atomic number of 15, so what is the distribution of its electrons? 28) _____

A) The first energy level has 8 and the second has 7.
B) The first, second, and third energy levels have 5 electrons each.
C) The electron arrangement cannot be determined from the atomic number alone.
D) The first energy level has 2, the second has 8, and the third has 5.
E) The first energy level has 2 and the second has 13.

Answer: D
Explanation: A)
B)
C)
D)
E)

29) Which of the following pairs has the most similar chemical properties to each other? 29) _____

A) ^{12}C and ^{28}Si

B) ^{16}O and ^{32}S

C) ^{12}C and ^{14}C

D) ^{1}H and ^{22}Na

E) ^{1}H and ^{2}He

Answer: C

Explanation: A)
B)
C)
D)
E)

30) Different types of living matter often have different forms of the same elements in their bodies. For example, the nitrogen in an animal often has a slightly different atomic structure than the nitrogen in a plant. Recently, nutritionists have discovered how to deduce the diets of various animal species by examining the type of nitrogen (and other elements) inside their bodies. 30) _____

What is the chemical basis behind this scenario?

A) Antioxidants buffer the potential damage that free radicals do to cells.

B) Covalent bonds result when two atoms share electrons.

C) Hydrophobic interactions keep water molecules from forming bonds with fats and oils.

D) Isotopes of the same element have the same atomic number but different atomic masses.

E) Radioactive elements can be used to trace the paths of molecules through the body.

Answer: D

Explanation: A)
B)
C)
D)
E)

31) If you examined the human body on a chemical composition basis, which of the following combinations of elements would be most common? 31) _____

A) O, C, N, Na

B) O, C, P, S

C) C, H, Ca, Cl

D) O, C, H, N

E) C, N, Ca, S

Answer: D

Explanation: A)
B)
C)
D)
E)

32) The hydrogen bond between two water molecules forms because water is 32) _____
A) a large molecule.
B) polar.
C) nonpolar.
D) hydrophobic.
E) a small molecule.

Answer: B
Explanation: A)
B)
C)
D)
E)

33) Sweating is a useful cooling mechanism for humans because water 33) _____
A) can exist in two states at temperatures common on Earth.
B) ionizes readily.
C) takes up a great deal of heat in changing from its liquid state to its gaseous state.
D) is an outstanding solvent.
E) takes up a great deal of heat in changing from its solid state to its liquid state.

Answer: C
Explanation: A)
B)
C)
D)
E)

34) The atomic number of hydrogen is 1. Based on this fact, all of the following must be true of hydrogen gas (H_2) EXCEPT that it 34) _____
A) is a polar molecule.
B) shares one pair of electrons between the two hydrogen atoms.
C) uses covalent bonds to form the molecule.
D) is a stable molecule.

Answer: A
Explanation: A)
B)
C)
D)

35) Which of the following is an example of hydrogen bonding? 35) _____
A) The bond between the H of a water molecule and H of a hydrogen molecule
B) The bond between O and H in a single molecule of water
C) The bond between O of one water molecule and O of a separate water molecule
D) The bond between O of one water molecule and H of a separate water molecule
E) The bond between H of one water molecule and H of a separate water molecule

Answer: D
Explanation: A)
B)
C)
D)
E)

36) Which of the following is LEAST affected by the presence of water? 36) _____

A) Nonpolar covalent bond
B) Polar covalent bond
C) Ionic bond
D) Hydrogen bond
E) Electron-proton interaction

Answer: A
Explanation: A)
B)
C)
D)
E)

37) Which of the following represents a molecule characterized by polar covalent bonding? 37) _____

A) H_2O B) NaCl C) O_2 D) H_2 E) CH_4

Answer: A
Explanation: A)
B)
C)
D)
E)

38) Sulfur is an essential element in the human body, and studying its characteristics is important in understanding human physiology. Sulfur atoms have six electrons in their outer shell. Based on this information, which of the following is TRUE? 38) _____

A) Sulfur is an important isotope of hydrogen.
B) Sulfur can form important molecules using covalent bonds.
C) Sulfur is inert.
D) Sulfur has eight electrons in its outer shell.

Answer: B
Explanation: A)
B)
C)
D)

39) Which of the following best explains the attraction of water molecules to each other? 39) _____

A) Nonpolar covalent bond
B) Polar covalent bond
C) Ionic bond
D) Hydrogen bond
E) Electron-proton interaction

Answer: D
Explanation: A)
B)
C)
D)
E)

40) Most biological molecules are joined by 40) _____
A) hydrogen bonds.
B) covalent bonds.
C) ionic bonds.
D) disulfide bonds.
E) peptide bonds.

Answer: B
Explanation: A)
B)
C)
D)
E)

41) What happens when hydrochloric acid (HCl) dissociates in pure water? 41) _____
A) The concentration of OH^- ions increases.
B) The HCl molecules separate into H^+ and Cl^- ions.
C) The water has a decrease of H^+ ions.
D) The pH of the solution increases.
E) The HCl molecules float on top of the water.

Answer: B
Explanation: A)
B)
C)
D)
E)

42) The human body must maintain a constant pH. In the blood, bicarbonate serves as a(n) _____ to help maintain the necessary pH. 42) _____
A) buffer B) solvent C) base D) acid

Answer: A
Explanation: A)
B)
C)
D)

43) Hydrophilic molecules 43) _____
A) readily dissolve in water.
B) are neutral and nonpolar.
C) do not readily dissolve in water.
D) form hydrogen bonds among themselves.
E) are repelled by water.

Answer: A
Explanation: A)
B)
C)
D)
E)

44) An atom's nucleus is composed of 44) _____
A) protons and electrons.
B) protons and neutrons.
C) neutrons and electrons.
D) neutrons only.
E) protons only.

Answer: B
Explanation: A)
B)
C)
D)
E)

45) Which of the following results from a transfer of electron(s) between atoms (e.g., NaCl)? 45) _____
A) Nonpolar covalent bond
B) Polar covalent bond
C) Ionic bond
D) Hydrogen bond
E) Electron-proton interaction

Answer: C
Explanation: A)
B)
C)
D)
E)

46) What determines the cohesiveness of water molecules? 46) _____
A) Hydrophobic interactions B) Ionic bonds
C) Hydrogen bonds D) Covalent bonds

Answer: C
Explanation: A)
B)
C)
D)

47) Imagine that you have been hired as a chemist and your first task is to examine a newly discovered atom. The paperwork you are given states that its atomic number is 110. What does this mean? 47) _____
A) The atom is an isotope.
B) The atom contains 55 electrons.
C) The atom contains 55 protons and 55 neutrons.
D) The atom contains 110 protons.

Answer: D
Explanation: A)
B)
C)
D)

48) Milk of magnesia is often used to treat stomach upset. It has a pH of 10. Based on this information, milk of magnesia 48) _____

A) is an acid.
B) is a base.
C) is hydrophobic.
D) has the same pH as stomach acid.

Answer: B
Explanation: A)
B)
C)
D)

49) Which statement is an accurate description of water molecules? 49) _____

A) They are slightly charged and polar.
B) They are ionically bonded.
C) They are uncharged and nonpolar.
D) They are charged and nonpolar.

Answer: A
Explanation: A)
B)
C)
D)

50) If a certain atom has a tendency to lose two electrons, that atom can then become a(n) 50) _____

A) isotope.
B) water molecule.
C) polar molecule.
D) ion.

Answer: D
Explanation: A)
B)
C)
D)

51) All animals need oxygen gas (O_2) for their primary cellular-level functioning. Inside the cell, O_2 is split apart into oxygen atoms. Eventually, electrons that are flowing through the cell will be "received" by this oxygen. But first, the electrons combine with protons present in the cell to form a basic element that has a single proton and a single electron. Then this element combines with the oxygen to form a certain chemical compound. 51) _____
In this scenario, what chemical compound is produced when this element combines with oxygen?

A) Water (H_2O)
B) Ozone (O_3)
C) Bicarbonate (HCO_3)
D) Carbon dioxide (CO_2)

Answer: A
Explanation: A)
B)
C)
D)

52) Free radicals are considered dangerous because they 52) _____

A) attack the atomic nucleus.
B) steal electrons from other atoms, causing those atoms to become unstable.
C) damage oxygen and cause it to become an antioxidant.
D) emit dangerous radiation.

Answer: B
Explanation: A)
B)
C)
D)

53) Polar covalent bonds form when 53) _____

A) electrons are shared unequally between atoms.
B) ions are formed.
C) more than one pair of electrons is shared.
D) atoms from two molecules are repelling each other.
E) an acid and a base are combined.

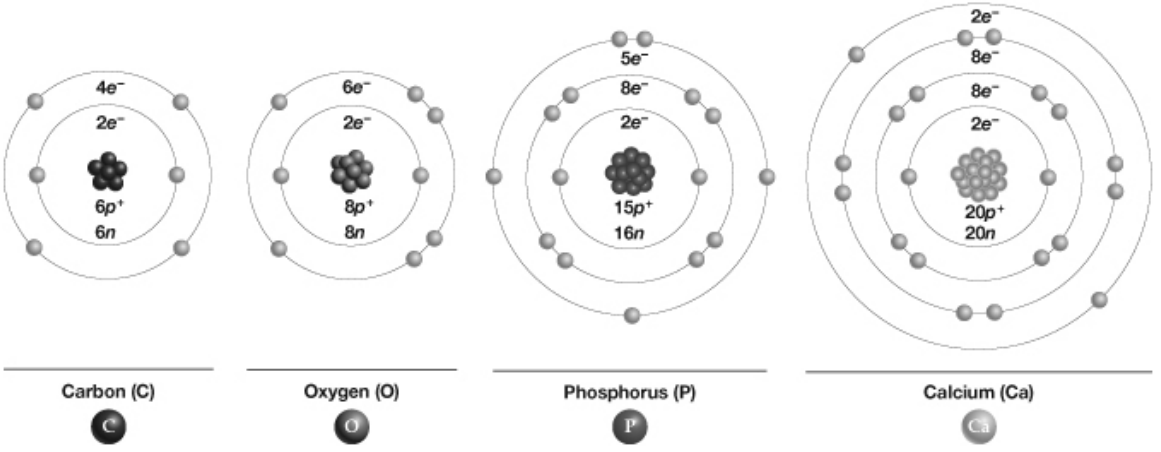
Answer: A
Explanation: A)
B)
C)
D)
E)

54) What type of bond is easily disrupted in aqueous solutions (one in which the solvent is water)? 54) _____

A) Polar covalent B) Ionic C) Covalent

Answer: B
Explanation: A)
B)
C)

55) Which of these atoms would become inert if it accepted three electrons? 55) _____



A) Oxygen B) Calcium C) Carbon D) Phosphorus

Answer: D

Explanation: A)
B)
C)
D)

56) A single covalent chemical bond represents the sharing of how many electrons? 56) _____

A) Three B) Two C) Six D) Four E) One

Answer: B

Explanation: A)
B)
C)
D)
E)

57) If you place a paper towel in a dish of water, the water will 57) _____

A) move up the towel as the water adheres to the paper towel while the cohesive water molecules stay bound to each other.
B) dissolve the towel because water is a good solvent.
C) move away from the towel because water molecules have hydrophobic interactions.
D) move up the towel because water molecules move quickly as it vaporizes.
E) separate into H^+ and OH^- ions, which will react with the paper towel molecules.

Answer: A

Explanation: A)
B)
C)
D)
E)

58) If sulfur has an atomic number of 16, how many covalent bonds can it form with other atoms? 58) _____

A) Six B) Four C) Eight D) Zero E) Two

Answer: E

Explanation: A)
B)
C)
D)
E)

59) Hydrogen bonding can take place between a hydrogen atom and what other atom? 59) _____

A) Nitrogen, oxygen, and fluorine
B) Oxygen
C) Fluorine
D) Nitrogen
E) Hydrogen

Answer: B

Explanation: A)
B)
C)
D)
E)

60) If a substance measures 7 on the pH scale, that substance 60) _____

A) has equal concentrations of H^+ and OH^- ions.
B) is basic.
C) has a higher concentration of OH^- than H^+ ions.
D) probably lacks OH^- ions.
E) may be lemon juice.

Answer: A

Explanation: A)
B)
C)
D)
E)

61) Carbon has atomic number 6. Carbon most likely 61) _____

A) shares neutrons.
B) loses protons.
C) shares electrons.
D) shares protons.
E) loses electrons.

Answer: C

Explanation: A)
B)
C)
D)
E)

62) If you place a feather on the surface of a bowl of water, the feather remains suspended on the surface due to the 62) _____

A) density of the water.
B) fact that water is a good solvent.
C) polarity of the water.
D) surface tension of the water.

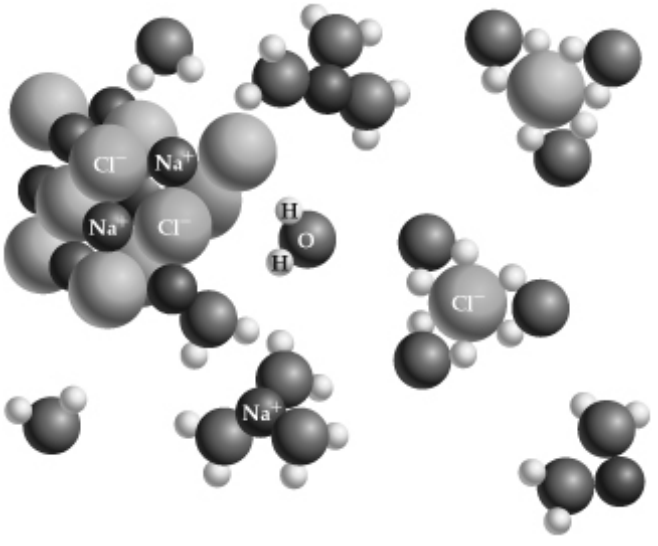
Answer: D
Explanation: A)
B)
C)
D)

63) The atomic number of an atom is defined as the 63) _____

A) total number of electrons and neutrons.
B) number of electrons in the outermost energy level.
C) number of protons in the atomic nucleus.
D) total number of energy shells.
E) number of neutrons in the atomic nucleus.

Answer: C
Explanation: A)
B)
C)
D)
E)

64) Which of the following is attracted to the hydrogen "end" of a water molecule, as depicted in this figure? 64) _____



A) Cl^- B) H C) NaCl D) Na^+

Answer: A
Explanation: A)
B)
C)
D)

65) The formation of ions involves the 65) _____

A) gain or loss of electrons.
B) gain or loss of neutrons.
C) sharing of protons.
D) sharing of electrons.
E) gain or loss of protons.

Answer: A
Explanation: A)
B)
C)
D)
E)

66) The formation of sodium chloride (NaCl) is the result of 66) _____

A) covalent bonding.
B) repelling between the same charges.
C) chemical unreactivity.
D) attraction between opposite charges.

Answer: D
Explanation: A)
B)
C)
D)

67) The fact that salt dissolves in water is best explained by the 67) _____

A) hydrophobic nature of the water.
B) ionic nature of water molecules.
C) slightly charged nature of water molecules.
D) polar nature of water molecules.
E) hydrophobic nature of salt.

Answer: D
Explanation: A)
B)
C)
D)
E)

68) When the acidic level of human blood increases, how is the proper balance of hydrogen ions (H^+) restored? 68) _____

A) Bicarbonate (HCO_3^-) accepts H^+ ions and forms carbonic acid.
B) Carbonic acid eats up the extra OH^- ions.
C) Bicarbonate (HCO_3^-) releases H^+ ions that combine with excess OH^- ions to form H_2O.
D) H^+ ion-donor levels increase.

Answer: A
Explanation: A)
B)
C)
D)

69) Radioactive isotopes are biological tools that are often used to 69) _____
A) detect brain tumors and other important medical technologies.
B) increase the pH of blood.
C) build up a store of calcium in a cell.
D) measure the size of fossils.

Answer: A
Explanation: A)
B)
C)
D)

70) For ice to melt, it has to 70) _____
A) increase its property of cohesion.
B) increase its heat of vaporization.
C) become less dense.
D) absorb heat from its surroundings.

Answer: D
Explanation: A)
B)
C)
D)

71) Sodium (Na), atomic number 11, has a tendency to lose an electron in the presence of chlorine. 71) _____
After losing the electron, Na has _____ protons in its nucleus.
A) 10 B) 12 C) 21 D) 22 E) 11

Answer: E
Explanation: A)
B)
C)
D)
E)

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

72) Imagine that you are trying to make a homemade salad dressing and place several drops of olive oil into a container of water. You stir the solution, but the oil doesn't readily mix. Instead, you observe a glistening clump of oil floating on the surface. Explain what is happening at the molecular level. (Your answer should include the term *hydrophobic*.) 72) _____

Answer: When oil molecules are together in water, their nonpolar surfaces are hydrophobic and nestle together. They are surrounded by water molecules that form hydrogen bonds with one another but not with the oil.
Explanation:

73) What is the difference between covalent and ionic bonds? 73) _____

Answer: Covalent bonds are the sharing of electrons between atoms, whereas ionic bonds are the electric charge attraction between two ions (typically a metal and a non-metal).
Explanation:

74) Ions and polar molecules that are electrically attracted to water molecules are _____. 74) _____

Answer: hydrophilic
Explanation:

75) The chemical properties of an element are determined by the number of _____ in its outermost energy shell. 75) _____

Answer: electrons
Explanation:

76) What property of water, in which water molecules stick to each other, is responsible for the ability of plants to get water from their roots up to their leaves? 76) _____

Answer: cohesion
Explanation:

77) The second electron shell is considered to be full when it contains _____ electrons. 77) _____

Answer: eight
Explanation:

78) What type of bonding exists between the slight positive charge of a hydrogen atom and the slight negative charge of a nearby oxygen atom? 78) _____

Answer: hydrogen bonding
Explanation:

79) more stable than a hydrogen atom (atomic number 1)? 79) _____

Answer: Two electrons completely fill the outermost electron shell of helium, but hydrogen must accept an electron before its outermost shell is filled.
Explanation:

80) A basilisk lizard can run across the surface of a pond due to a property of water called _____. 80) _____

Answer: surface tension
Explanation:

81) Isotopes are atoms of the same element that have different numbers of _____. 81) _____

Answer: neutrons
Explanation:

82) How does a base differ from an acid? 82) _____

Answer: A base is a solution with a concentration of OH^- that is higher than the concentration of H^+ (pH greater than 7). An acid has a H^+ concentration that exceeds its OH^- concentration (pH less than 7).
Explanation:

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

83) Acids have pH values below 7, whereas bases have pH values above 7. 83) _____

Answer: True False
Explanation:

84) Water surface tension is a result of the cohesive nature of water molecules. 84) _____

Answer: True False
Explanation:

85) Most liquids become less dense upon solidification, but water is different in that it becomes denser when it solidifies. 85) _____

Answer: True ✓ False
Explanation:

86) Every atom of the same element has an equal number of electrons and protons. 86) _____

Answer: ✓ True False
Explanation:

87) The attractive force that holds two or more water molecules together is an example of an ionic bond. 87) _____

Answer: True ✓ False
Explanation:

88) When water freezes, stable hydrogen bonds form between the water molecules that create an open, six-sided (hexagonal) arrangement. 88) _____

Answer: ✓ True False
Explanation:

89) To maintain a constant pH, buffers act to either accept or release H^+. 89) _____

Answer: ✓ True False
Explanation:

90) Isotopes are atoms of the same element that have different numbers of protons. 90) _____

Answer: True ✓ False
Explanation:

Answer Key
Testname: C2

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

51) A
52) B
53) A
54) B
55) D
56) B
57) A
58) E
59) B
60) A
61) C
62) D
63) C
64) A
65) A
66) D
67) D
68) A
69) A
70) D
71) E
72) When oil molecules are together in water, their nonpolar surfaces are hydrophobic and nestle together. They are surrounded by water molecules that form hydrogen bonds with one another but not with the oil.
73) Covalent bonds are the sharing of electrons between atoms, whereas ionic bonds are the electric charge attraction between two ions (typically a metal and a non-metal).
74) hydrophilic
75) electrons
76) cohesion
77) eight
78) hydrogen bonding
79) Two electrons completely fill the outermost electron shell of helium, but hydrogen must accept an electron before its outermost shell is filled.
80) surface tension
81) neutrons
82) A base is a solution with a concentration of OH^- that is higher than the concentration of H^+ (pH greater than 7). An acid has a H^+ concentration that exceeds its OH^- concentration (pH less than 7).
83) TRUE
84) TRUE
85) FALSE
86) TRUE
87) FALSE
88) TRUE
89) TRUE
90) FALSE