Name: _____

Date: _____ Grade: _____

Integrated Physics & Chemistry

CHAPTER 7 TEST

Congratulations on completing this chapter! ***Answer the following questions to test your understanding of the material. When you finish, hand in your test to your teacher for a final grade. Each answer is worth 2 points.***

Fill in the blank or circle True or False.

1. Mendeleev arranged the elements based primarily on their valence and atomic weight.
   (a) True or (b) False

2. A horizontal row of elements in the periodic table in which the elements change from metals to nonmetals is a _____.

3. Elements on the left side of the periodic table are _____.

4. The elements of the sodium family have a valence of: _____.
   (a) +1 (b) +2 (c) 0 (d) -1

5. The elements of the chlorine family have a valence of: _____.
   (a) +1 (b) 0 (c) +2 (d) –1

6. One advantage of the Bunsen burner is that it produces a hot, steady flame.
   (a) True or (b) False

7. A prism separates light into the colors by _____.

8. The prefix ‘di’ in diatomic means: _____.
   (a) heavy (b) two (c) colorless (d) one

9. Argon is the most common noble gas in the: _____.
   (a) Earth’s atmosphere (c) Earth’s lithosphere
   (b) Earth’s hydrosphere (d) Sun

10. The symbol for helium is _____.

11. *Kr* is the symbol for _____.

12. The most chemically active element known is: _____.
    (a) aluminum (b) argon (c) fluorine (d) iodine

13. Write the valence below each element in this table:

Li	Be	B	C	N	O	F	Ne
___	___	___	___	___	___	___	___

14. During chemical reactions, sodium is more likely to: _____.
    (a) accept an electron
    (b) release an electron
    (c) change to calcium
    (d) not have an effect on an electron

15. Ionic compounds are held together because the atoms: _____.
    (a) have opposite static charges
    (b) share electrons
    (c) have the same charge
    (d) contain adhesives

16. The paddlewheel of the Crooke's radiometer began to spin when the vanes were struck by: _____.
    (a) beta particles
    (b) X-rays
    (c) heated air molecules
    (d) wind currents

17. Cathode rays are streams of: _____.
    (a) alpha particles (b) electrons (c) neutrons (d) protons

18. Because cathode rays struck a wheel and caused it to roll along a track, J. J. Thomson concluded that cathode rays were: _____.
    (a) particles (b) exact (c) waves (d) molecules

19. In the Rutherford alpha scattering experiment, most of the alpha particles went through the gold foil as if it were: _____.
    (a) a brick wall a thousand bricks thick
    (b) plum pudding
    (c) made of an incredibly dense substance
    (d) mostly empty space

20. Most of the mass and all of the positive charge of an atom are concentrated in the: _____.
    (a) electron (b) neutron (c) nucleus (d) proton

21. In the planetary model of the atom the planets represent: _____.
    (a) electrons (b) neutrons (c) moons (d) quasi-stellar objects

22. The nucleus contains protons and: _____.
    (a) electrons (b) betas (c) neutrons (d) ions

23. Teflon is slippery, inert and: _____.
    (a) conducts electric current
    (b) resists the flow of electrical currents
    (c) accepts electrical currents
    (d) unusable

24. As a rule, active elements have active compounds.
    (a) True or (b) False

25. Freon and Teflon are examples of: _____.
    (a) fluorocarbons
    (b) good housekeeping
    (c) hydrocarbons
    (d) bicarbons

26. Because Teflon is made of a long chain of repeated, identical units, it is known as a _____.

27. _____ is dissolved in alcohol to make an antiseptic and disinfectant.
(a) Chlorine (b) Iodine (c) Astatine (d) Fluorine

28. The thyroid gland enlarges if a person does not have enough chlorine in the diet.
(a) True or (b) False

29. Because the elements fluorine, chlorine, bromine, iodine and astatine form salts, they are known as: _____.
(a) acids (b) bases (c) halogens (d) hydrides

30. *HCl* is the formula for hydrochloric acid and hydrogen _____.

31. The sour taste of lemon and grapefruit comes from: _____.
(a) citric acid (c) sodium chloride
(b) hydrofluoric acid (d) insecticides

32. Mixing water with an acid makes the acid dilute.
(a) True or (b) False

33. _____ is a strong base.
(a) Sodium chloride (c) Hydrogen chlorine
(b) Ammonium hydroxide (d) Sodium hydroxide

34. The reaction of an acid with a base produces water and a _____.

35. Water is a(n) _____ compound.
(a) covalent (b) ionic (c) bionic (d) monovalent

36. Because the water molecule has a positive region and a negative region it is described as being polar. (a) True or (b) False

37. The universal solvent is: _____.
(a) carbohydrates (b) carbon tetrachloride (c) acetone (d) water

38. The most common liquid on Earth is: _____.
(a) petroleum (b) water (c) soda (d) coffee

39. Shivering shows that a person's muscles are trying to: _____.
(a) cramp (b) generate heat (c) shed excess moisture (d) relax

40. When water changes to ice it: _____.
(a) becomes pure (c) releases 80 calories of heat energy
(b) contracts (d) vaporizes

41. Water molecules have a weak attraction for one another.
(a) True or (b) False

42. One way to make a solid go into solution faster is to increase its surface area.
(a) True or (b) False

43. Liquids and _____ dissolve faster in hot water.
(a) solids (b) gases (c) vapors (d) dirt

44. Doubling the pressure of a gas causes more of it to be dissolved.
(a) True or (b) False

45. In the laboratory, pure water is prepared by: _____.
(a) adding alcohol
(b) distillation and condensation
(c) freezing and thawing
(d) settling and filtering

Circle the letter of the statement that gives the best meaning for each Life Principle.

46. *"We must adjust to changing times and still hold to unchanging principles."*
(a) We must adjust our principles to the changing times in which we live.
(b) Principles are truths or absolutes which do not change with time.
(c) No absolutes exists, so time has no bearing on them.

47. When Einstein said, *"The important thing is not to stop questioning,"* he meant:
(a) By asking questions each of us demonstrates an inquisitive mind and a desire to keep learning.
(b) We should continually question all authority and instructions.
(c) We should unquestioningly accept all scientific theories as fact.

48. *"Life is not just an accident based on random processes."*
(a) If life evolved from cosmic accidents, then my existence is by chance and without purpose.
(b) If life is no accident, life has to be purposeful, which means my life has a purpose.
(c) Accidental life based on random processes gives a universal meaning to life.

49. "In the arena of human life, the honors and rewards fall to those who show their good qualities in action."
(a) Honors and rewards are given in the arena of human life.
(b) Everyone has good qualities deserving of honors and rewards.
(c) Honors and rewards go to those who demonstrate their good qualities.

50. *"In questions of Science, the authority of a thousand is not worth that humble reasoning of a single individual."*
(a) Just because a lot of important people endorse a concept does not make it right; reason it out for yourself and prove your point.
(b) Science causes us to question the opinions of those in authority.
(c) Humble reasoning (based on careful experimentation) in scientific matters may show the "experts" to be wrong in their conclusions, thereby providing valuable scientific input.