Name: _____

Date: _____ Grade: _____

Integrated Physics & Chemistry

CHAPTER 6 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. The First Law of Electrolysis states that the amount of an element transformed at each electrode is proportional to the amount of _____.

2. The Second Law of Electrolysis states electrolysis releases elements proportional to their equivalent _____.

3. Aluminum has an atomic weight of 27 and a valence of 3. Its equivalent weight is _____.

4. The ion that will become neutral if it gains three electrons is: _____.
   (a) Ca^{++} (b) Al^{+++} (c) H (d) O^{--}

5. Unlike magnetic poles repel one another.
   (a) True or (b) False

6. The difference between geographic north and magnetic north is magnetic: _____.
   (a) declination (b) inclination (c) induction (d) refraction

7. The Law of Magnetic Force states that: _____.
   (a) diffused reflection causes parallel rays to reflect in only one direction
   (b) the intensity of light is inversely proportional to the square of the distance from the light source
   (c) the force of attraction between two magnetic poles is directly proportional to the product of their strength and inversely proportional to the square of the distance separating them
   (d) the angle of incidence equals the angle of reflection. The incident ray, the normal ray and reflected ray all lie in the same plane

8. Magnetism is caused by: _____.
   (a) a fast flowing liquid or gas (c) very high temperatures
   (b) electric charge in motion (d) volcanic implosion

9. _____ electricity produces a magnetic field.

10. A domain is: _____.
    (a) a small elementary magnet in a ferromagnetic substance
    (b) a series of electrons spinning in opposite directions
    (c) an area over which a magnet rules
    (d) the length of the magnet

11. Electrons traveling along a wire produce a magnetic field around the wire.
    (a) True or (b) False

12. Electromagnetism is due to static electricity in concentric motion.
    (a) True or (b) False

13. A magnetic field is: _____.
    (a) a series of magnets that act together
    (b) the region in which a magnet exerts its influence
    (c) the region in space that has no magnetic lines of force
    (d) a place where magnets grow

14. When a paperclip jumps to a magnet before being touched, the paperclip is responding to lines of force of the _____ field.

15. A magnetic field can be created by a wire provided: _____.
    (a) it carries an electric current
    (b) it is in a strong static electric field
    (c) it is made of aluminum
    (d) the field coordinates are the same

16. A magnetic field can cause electricity to flow in a wire by: _____.
    (a) moving the wire around the magnet
    (b) being exposed to heat
    (c) shocking it
    (d) spinning it

17. An electric motor converts electricity into _____ motion.

18. High voltage in a wire increases the risk of electrocution.
    (a) True or (b) False

19. Power is equal to the product of voltage and _____.

20. Increasing current in a wire: _____.
    (a) causes the wire to emit ultraviolet light
    (b) changes the voltage
    (c) increases the loss of energy by heat
    (d) causes it to break

21. Visible light is a small part of the _____ spectrum.

22. A person's body heat is detected as _____ light.

23. _____ is a combination of the light that enters the eye, the rods and cones that receive the light, and the brain that processes the signal.

24. Two colors that produce white light are _____ colors.
(a) complementary (b) physical (c) supplemental (d) augmented

25. The intensity of light is inversely proportional to the _____ of the distance from the light source.

26. A substance that lets light pass through unhindered is _____.

27. The law of reflection states the angle of incidence is _____ the angle of reflection.

28. The outer surface of a shiny Christmas tree ornament or some shiny hubcaps is an example of a _____ mirror.
(a) convex (b) concave (c) reflexive (d) silver

29. The bowl (front side) of a spoon and the inside of a sphere are examples of _____ surfaces.
(a) convex (b) concave (c) reflective (d) refractive

30. To be at infinity, an object must be as far away as the farthest star.
(a) True or (b) False

31. Most large, modern telescopes use _____ mirrors to bring light to a focus.
(a) convex (b) concave (c) reflexive (d) refractive

32. The speed of light in diamond is _____ than in any other substance.

33. The _____ is determined by the speed of light in a vacuum divided by the speed of light in the medium.

34. The lens that causes parallel rays of light to converge is a _____ lens.

35. People who are _____ can only clearly see objects that are far away.

36. The correction for a person that is nearsighted is a lens that _____ light.
(a) converges (b) diverges (c) submerges (d) immerges

37. Loss of accommodation is caused when the _____ cannot change shape.
(a) cornea (b) iris (c) lens (d) retina

38. What is the magnification if an object 5 cm tall appears to be 50 cm tall: m = _____.

39. A magnifying glass with a focal length of 10 cm has a magnification of m = _____.

40. _____ means *small life*.

41. The formula for the magnification of a microscope objective is _____.

42. _____ is the ability to separate two objects that are close together.

43. The index of refraction is the ratio of the _____ of light in a substance compared to its _____ in a vacuum.

44. Separating light into the colors is: _____.
(a) declination (b) refraction (c) reflection (d) dispersion

45. The index of refraction is the same for all colors.
(a) True or (b) False

LIFE PRINCIPLES

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

46. *"It is best to view the faults of others with the naked eye, while using a microscope to examine our own."*
(a) When using a microscope, faults of others show up best in a state of nakedness.
(b) Since a microscope makes tiny things look bigger, this instrument is helpful to use when viewing others' faults.
(c) We should examine our own faults more intently than those of others.

47. *"Unlike magnetic poles and personalities, our character is like a magnet that attracts people like us and repels people not like us."*
(a) Magnetic poles attract opposite charges and repel like charges.
(b) Because we are like magnetic poles, we attract people whose personalities are opposite to our own.
(c) We attract (and are attracted to) people whose character resembles our own.

48. *"Great things are not done by impulse, but by a series of small things brought together."*
(a) "Little drops of water, little grains of sand make the mighty ocean and the pleasant land."
(b) By impulse, great things can be brought together.
(c) Great things are impulsively brought together in small ways.

49. *"Genuine humility is a mark of true greatness."*
(a) A person must be humiliated in order to be great.
(b) A truly great person is a humble person.
(c) Genuine greatness comes by being humbled.

50. *"The heights by great men reached and kept, Were not attained by sudden flight, But they, while their companions slept, Were toiling upward in the night."*
(a) Great people work a lot at night in order to reach greater heights of success.
(b) The companions of great people sleep a lot instead of working.
(c) Great people do not reach heights of success suddenly but work harder and longer than others.