Name: _____

Date: _____ Grade: _____

Integrated Physics & Chemistry

CHAPTER 4 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. A rubber band is elastic because it will stretch.
   (a) True or (b) False

2. An object that will change and keep its new shape easily is described as being: _____.
   (a) elastic (b) bouncy (c) solid (d) plastic

3. According to Hooke's Law relating to force and deformation of a solid, "The amount a solid is deformed is _____ proportional to the force that is applied to it."

4. Liquids and gases are fluids because they will _____.

5. Molecules of the same substance cling together primarily because of _____.

6. The attraction between two different surfaces is: _____.
   (a) cohesion (b) buoyancy (c) admission (d) adhesion

7. Water can rise in a fine glass tube by _____.

8. Pressure would be measured in: _____.
   (a) feet per square inch
   (b) cubic centimeters per gram
   (c) grams per cubic centimeter
   (d) pounds per square inch

9. The density of the atmosphere is _____ at the earth's surface.

10. Water pressure is less at the bottom of a lake than at the surface.
    (a) True or (b) False

11. Hydrodynamics is the study of: _____.
    (a) stationary fluids
    (b) fluids in otion
    (c) thick fluids
    (d) mountain of fluids

12. Confined fluids transmit pressure equally in all directions.
    (a) True or (b) False

13. Water exerts pressure on all surfaces of a submerged object, including the _____ and the _____.

14. The lifting force acting on a solid immersed in a fluid is equal to the weight of the fluid _____ by the object.

15. A stone lowered into the water will weigh _____ than the same stone in the air.

16. An object that weighs 27 grams sinks and displaces 10 grams of water. Its weight in water will be _____ grams.

17. According to Boyle's Law relating to the volume and pressure of a gas, "the volume of a gas is _____ related to the pressure provided temperature is kept constant."

18. Diffusion takes place most rapidly in: _____.
    (a) solids (b) fission (c) gases (d) liquids

19. For more efficient use of its fuel, a ship should create _____ waves and eddies.
    (a) fewer (b) more (c) larger (d) more distinct

20. The name for the study of fluids at rest is _____.

21. Fluids that flow in smooth layers have _____ flow.
    (a) affluent (b) turbulent (c) fluent (d) laminar

22. The pressure of a fluid is kinetic energy.
    (a) True or (b) False

23. The name for the study of fluids in motion is _____.

24. An airplane wing gains lift because of: _____.
    (a) Hooke's Law
    (b) Archimedes' Principle of Buoyancy
    (c) Pascal's Principle of Fluid Pressure
    (d) Bernoulli's Principle

25. The total kinetic energy of the molecules of a substance is a measure of the substance's _____.

26. Crystalline solids such as metals have definite _____ temperatures.

27. The amount of heat required to melt one gram of a substance is the latent heat of _____.

28. Evaporation is a warming process.
    (a) True or (b) False

29. Which of the following measures the average kinetic energy of the molecules of a substance? _____
    (a) heat (b) temperature (c) thermometer (d) barometer

30. At small temperature differences, the efficiency of a heat engine is: _____.
    (a) high (b) more efficient (c) medium (d) low

31. _____ is a measure of disorganization.

32. A heat pump can move heat from a cold region to a hot region.
    (a) True or (b) False

33. Heat flows from a body of high temperature to a body with: _____.
    (a) less heat (c) lower temperature
    (b) more elevation (d) more superiority

34. Conduction takes place more readily in _____.

35. A surface that is a good radiator of heat is also a good _____ of heat.

36. Conduction, convection and _____ can transfer heat.

37. The distance between any two successive identical points on a wave is the _____.

38. Interference of waves can results in a(n) _____ in the amplitude.

39. The speed of a wave is given by the product of the frequency and wavelength.
    (a) True or (b) False

40. Loudness is a sound's _____.

41. Frequency of sound is its _____.

42. Waves reflect best from objects that are _____ than their wavelength.

43. A high pitched sound is more likely to be reflected than a low pitched sound.
    (a) True or (b) False

44. Sympathetic vibration is an example of _____.

45. A lighter object is more likely to vibrate more quickly than a similar object that is _____.

46. Resonance between tuning forks is also known as _____.

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

47. *"Success comes in cans, failure in can't."*
    (a) You can't fail if your success comes in "cans."
    (b) Successive failures circumvent cans.
    (c) Success comes by purposing "I can." Failure comes by thinking "I can't."

48. *"If opportunity doesn't knock, build a door."*
    (a) If things do not go right, consider a door-making business.
    (b) Preparing ourselves for the future is like "building a door" on which opportunity can knock.
    (c) Building doors provides ample opportunities for people to knock.

49. *"Admonish your friends privately, but praise them openly."*
    (a) Publicly praised friends will want to admonish you privately.
    (b) Publicly admonishing your friends may enhance your friendship.
    (c) Praise people in public; scold them, if you have to, in private.

50. *"Anger is one letter short of danger."*
    (a) An angry person can be very dangerous.
    (b) "Danger" is actually a misspelling of "anger."
    (c) Early printers used "anger" to spell "danger" when they were short of the letter "d."