Final Exam Review for Physical Science

Name: Hour:

1. Average speed is the _____traveled by an object divided by the time it takes to travel that distance.
2. Speed calculations use both _____ and _____.
3. An object at rest (not moving) has a speed of _____km/h.
4. Velocity indicates _____ -speed does not.
5. How can you recognize the difference between examples of speed and velocity.
6. Be able to do calculations to determine speed/velocity. Do practices problem 1-3 found on page 323. Speed = distance/time.
7. Know the SI unit for acceleration (_____).
8. Acceleration is the change in velocity divided by _____.
9. Velocity-time graphs with positive slopes indicate that an object is _____ _____.
10. Velocity-time graphs with negative slopes indicate that an object is _____ _____.
11. Forces acting on objects change the _____ of an object.
12. _____ force is the total of all forces acting on an object.
13. Objects with no net force acting on them remain at _____.
14. _____ forces act on objects in such a way as to create a net force of zero.
15. Objects that are standing still have _____, no velocity, and no momentum.
16. Be able to calculate momentum (P=mv, Momemtum = _____ x _____).
    -NOTE: Also know: m = P/v and v = P/m
17. Weight is the downward force due to _____.
18. The closer two objects are, the _____ the gravitational force there is between them.
19. The _____ the two objects are, the greater the gravitational force there is between them.
20. Newton's first law of motion states that every object maintains constant velocity unless aacted on by an _____ force.
21. Newton's second law of motion states that an unbalanced force acting on an object equals the object's _____ times its _____.
22. Newton's third law of motion states that for every action force there is an equal and _____ reaction force.
23. The SI unit of force is the _____.
24. One pound is equal to 4.448 N.
25. _____ is the unit used to measure acceleration during free fall.
26. Terminal velocity (320 km/h) is achieved when the force of air resistance is _____ to the force of gravity.
27. Work = _____ x _____.
28. Solve practices problems on page 379 using the work equation.
29. 1 N*m = 1 J = 1 kg*m 2/s 2 are all units used to measure work.
30. Power is measured in _____, _____ and _____.
31. Be able to calculate power. Power = _____ divided by _____.
32. Mechanical advantage = _____force divide by the _____ force = _____distance divided by the _____distance.
33. Mechanical advantage is a number that is used to indicate how much a force or distance is multiplied by a

_____.

34. Machines may be used to allow a person to apply _____ force over a longer distance to accomplish the same amount of work.

35. Be able to determine mechanical advantage. See page 384 Practice questions at the top of the page.

36. Know the three types of levers: a) _____ _____levers have a fulcrum between points of application of output and input forces, b) _____ _____levers have a fulcrum at one end and input force is applied to the other end, c) _____ _____levers multiply distance rather than force (they have a mechanical advantage of less than one), there is a fulcrum on one end and an output force on the other end. See page 386 Figure 5.

37. Wheelbarrows are a good example of a _____ class lever.

38. A hammer is a good example of a _____ class lever.

39. The human body has many _____ class levers (eg. Arm).

40. Temperature is a measure of the _____energy of a molecules.

41. Temperature is associated with the sensations of hot and _____.

42. Temperature is measured with _____.

43. Be able to convert from Celsius to Kelvin and Kelvin to Celsius (by adding or subtracting _____ degrees).

44. Know that _____ Celsius is 98.6 Fahrenheit.

45. Increases in temperature are associated with increases in the kinetic energy of a substance.

46. Transfer of energy caused by the collision of molecules is called _____.

47. Transfer of energy by the movement of fluids or gases with different temperatures is called _____.

48. Radiation is how the _____ energy reaches the earth.

49. Cool air descends while hot air rises (this is what causes _____ currents).

50. Radiation does _____ involve the movement of matter.

51. _____ are good conductors.

52. Non-metals are _____ conductors.

53. Absolute zero is 0 _____ or _____Celsius.

54. Energy = mass * specific heat capacity * change in temperature. See page 433 for an example. Solve practice pg. 434 (1-3).

55. The first law of thermodynamics states that the _____ of a system is constant.

56. Sound waves require a _____ in order to be transferred. Light waves require no _____, they are electromagnetic radiation.

57. Water waves transport _____ but not water.

58. _____ waves travel through rock and other materials inside the earth.

59. Be able to use the equation to solve problems: wave speed = frequency * wavelength. Practices problems (1-3).

60. _____ is measured in hertz (Hz), hertz are a measure of the number of cycles/second.

61. Wave speed is measured in _____ divided by _____.

62. Doppler effect is where the frequency of a sound will increase when an object emitting a sound is moving _____ the person hearing the sound.

63. Sound waves are _____ waves.

64. Light waves are _____ waves.

65. Water waves are _____ waves.

66. Loudness depends on the _____ of a wave.

67. The color of light is determined by the _____of the light wave.

68. _____ rays are used to kill cancer cells.

69. The intensity of sound determines its _____.

70. The _____ of light is the rate at which energy flows.

71. Know Figure 14 page 502 (Be able to distinguish shorter vs longer wavelength, higher vs lower frequency and higher vs lower energy.) Draw and label the spectrum.

72. Rough surfaces reflect light rays in many _____.

73. The angle of _____ equals the angle of _____.

74. Why does a rose look red?

75. When light moves from a material in which its speed is higher to a material in which its speed is lower, it is bent _____ the normal.

76. Like charges _____ while unlike charges _____.
77. When there is an equal amount of positive and negative charges on an object, the object is _____.
78. What does electric field lines indicate ?
79. How does the potential cause the electrons to move in a battery (what direction) ?
80. Resistance is caused by _____ friction.
81. What are the units for resistance, voltage and current.
82. Sound waves travel fastest in _____ then _____ then _____.
83. What happens to the resistance of a superconductor when its temperature drops below the critical temperature ?
84. Do practice problem from page 543 (2-6).
85. A device that protects a circuit from _____ loading is called a _____ breaker.
86. Like magnetic poles always _____ each other.
87. The magnetism of a piece of magnetized iron can be weakened by _____ and _____ the iron.
88. How is the strength of the magnetic field of a solenoid increased?
89. An electric _____ and a _____ are similar in that both transform energy into a different form.
90. A device that converts electric energy into mechanical energy is an _____ _____.
91. Where is the magnetic force the strongest?
92. Generators convert _____ energy into _____ energy.
93. What does a transformer do to the voltage ?
94. An incline plane changes both the _____ and the _____ of the force.
95. Gravitational potential energy depends on the _____ of the object.
96. What is friction?
97. What are the SI units for mass, time, and distance?
98. The brightness of a light bulb is determined by the filament's _____.
99. State the law of conservation of energy.
100. Draw a pendulum showing the relationship between P.E. and K.E.