CRCT Review

Day #2

DO NOT write on This paper

Laws

a. 1st Law: Law of Inertia

b. 2nd Law: F = ma

c. 3rd Law: Action/Reaction

Descriptions of Motion

14) A dummy riding without a seatbelt is propelled through the windshield of a car when it crashes into a tree.

15) You shoot a sawed off shot gun and it makes your shoulder sore.

16) A spaceship launched into frictionless space requires no force to maintain constant velocity.

17). When dropped from the same height, a 50 kg pumpkin hits the ground with a larger force than a 3 kg pumpkin.

18) A Neanderthal punches a rock wall and breaks his hand.

19) Galileo found that a ball rolling down one incline will pick up enough speed to roll up another.

20) A skydiver uses a parachute to reach terminal velocity and prevent death.

21) Two balls with different masses are dropped at the same time from the roof of the school. You observe that both balls hit the ground at the same time. What can you hypothesize about the air resistance acting on each ball?

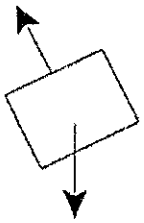
a. It is the same on both balls.

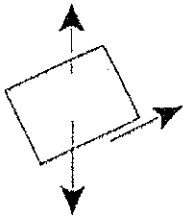
b. It is larger on the more massive ball.

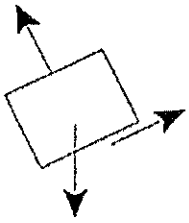
c. It is larger on the less massive ball.

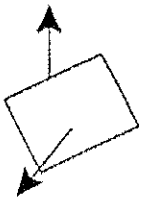
d. It is different, but there is no way to tell which is greater.

22. A box is at rest on a hill. What is the correct vector diagram?

a. 

b. 

c. 

d. 

23. If an astronaut took a rocket ship to Mars what would change?

a. Width of astronaut
b. Mass of astronaut.
c. Height of astronaut.
d. Weight of astronaut.

24. In a professional automobile paint shop, an electric charge is created on the surface of the automobile, and an electric charge is created on the tiny paint particles that are to be applied. This will help create a better paint job on the automobile. Using what you understand about electric charges, which of the following best explains why this would be done?

a. The two electric charges are the same so the paint will be attracted to the car.
b. The two electric charges are different so the paint will be attracted to the car.
c. The two electric charges are the same so the paint will be repelled from the car.
d. The two electric charges are different so the paint will be repelled from the car.

25.If the earth was twice as far from the sun how would the force of gravity between the earth and the sun change?

a. The force would double
b. The force would be ½
c. the force would be 1/4
d. the force would be four times as much

26. During an experiment, you notice that as you increase the mass on a spring scale (used to measure weight) that the reading on the scale also increases. Which statement best describes the relationship between the variables in this experiment?

a. Weight directly influences the amount of mass.
b. Mass has little influence on weight.
c. As mass increases, weight will increase.
d. Weight and mass are identical.

27) The force between two positive static charges is +4N. The force is:

a. repulsive
b. attractive
c. can't tell

28) Acceleration is defined as the CHANGE in

a. Position divided by the time interval
b. Velocity divided by the time interval
c. Time it takes to move from one speed to another speed
d. Time it takes to move from one place to another place

29) A ball is thrown straight up. At the top of its path its acceleration is

a. 0 m/sec
b. About 10 m/sec
c. About 5 m/sec
d. About 20 m/sec

~~CRT Review Day 3~~ - Do Not Write on

1)A sound wave travels at 343 m/s and a compression passes by every 12 ms. What is the wavelength of this sound?

a. 1 m b. 2 m c. 3 m d. 4 m

2) Which of the following is not a characteristic of a gamma ray?

a. has a low frequency b. has a great amount of energy
c. is an electromagnetic wave

3)What is the type of energy in a wrecking ball weighing 100 Newtons suspended 100 feet above the ground?

a. Accumulative b. Floatational c. Kinetic d. Potential

4) How could you increase the potential energy of the water in the tower?

a. Increase the height of the tower. b. Increase the pipe's diameter.
c. Increase the number of filters in the water tank.
d. Increase the valve opening at the end of the pipe.

5) The _____ of a sound determines its loudness.

a. amplitude b. resonance c. timbre d. frequency

6) A ray of light strikes a mirror at 30 degrees with the normal. What is the angle between the incident ray and the reflected ray?

a. 15 degrees b. 30 degrees c. 45 degrees d. 60 degrees e. 90 degrees

7) A water wave in a ripple tank is moving at a speed of 10 cm/s with a wavelength of 4.0 cm. It moves into a new area of the ripple tank where the wavelength of the wave is 3.2 cm. The speed of the water wave in the new area is

a. 12.5 cm/s b. 10 cm/s c. 8.0 cm/s d. 1.28 cm/s

Classify each of the following according to the type of potential energy. Write the letter of the correct response .

A) Gravitational B) Elastic C) Chemical D) Electrostatics E) Nuclear

8. Water in a reservoir behind a dam.
9. Hydrogen found within the sun.
10. Batteries for a CD player.
11. A bungee cord, when the jumper is at the lowest position, and the cord is stretched.
12. Rubbing a balloon through your hair, then holding it a few centimeters to the side of your hair.

13. A young girl is swinging in a backyard swing. As she moves through the lowest point of her swing, she has reached her

a. minimum KE
b. maximum KE
c. maximum PE
d. none of the above

14. The law of conservation of energy implies that:

a. Potential and Kinetic energy are always completely changed to useful work.
b. The total energy of a system remains constant, if all forms of energy are considered.
c. Losses do not occur when energy is converted from one form to another.
d. All heat energy is wasted.

15. Which of the following is not a characteristic of a gamma ray?

a. has a low frequency
b. has a great amount of energy
c. is an electromagnetic wave

16) How much work is done on a 50 N rock that you lift 10 m straight up?

a. 500 J
c. 50 J
b. 10 J
d. 1 J

17) How much power is expended if you lift a 50 N rock 10 meters in 10 second?

a. 500 W
c. 50 W
b. 10 W
d. 5 W

18) Electromagnetic Waves are

a. Transverse waves
b. Longitudinal waves

19) Which of the following electromagnetic waves has the highest frequency?

a. Radio waves
b. Microwaves
c. Infrared waves
d. Ultraviolet waves

20) If you lift one load up two stories, how much work do you do compared to lifting one load up only one story?

a. 4 times as much
c. the same amount
b. Twice as much
d. one half as much

In an experiment, you adjust the frequency of a wave and measure the resulting wavelengths. You obtain the following data:

Frequency, f (hz)	Wavelength, l (m)	Wavespeed, n (m/s)
5	0.4	2.00
8	0.25	2.00
11	0.182	2.00
14	0.143	2.00

21) Which is the dependent variable?

A) Frequency
B) Wavelength
C) Wavespeed

22) An object that has kinetic energy must be

a. Moving b. falling c. elevated d. at rest

23) An object that has gravitational potential energy must be

a. Moving b. falling c. elevated d. at rest

24) An arrow in a bow has 70 J of potential energy. Assuming no energy loss, how much kinetic energy will the bow have after it is shot?

a. 140 J b. 70 J c. 50 J d. 35 J

25) As an object is falling its potential energy is mostly changing to

A) Potential Energy
B) Kinetic Energy
C) Heat Energy
D) Sound Energy