Science 7- Part II Answer Key

Teacher Key

9-1) B
9-2) D
9-3) A speed= distance/time
9-4) D Weight is a force.
9-5) B Average speed= distance/time 6km/3hr=2km/hr
9-6) B F=ma 1500kg * 50m/s/s = 75000 N
9-7) A Newton's third Law of Motion
9-8) B Acceleration due to gravity $g=9.8m/s^2$
9-9) A
9-10) C Conservation of energy (lowest point has highest KE max velocity)
9-11) A 122.5m-78.4m= 44m
9-12) D
9-13) C The object moves in the direction of the greatest force.
9-14) C Unchanging speed is constant speed.
9-15) Skip this question
9-16) B acceleration=change in velocity/ change in time
9-17) C velocity = acceleration * time
9-18) C Acceleration is a change in direction or speed
9-19) B Inertia (Body at rest remains at rest)
9-20) A The curve shows the distance traveled per unit time is increasing
9-21) A Slope of a velocity time curve is acceleration.
9-22) C
9-23) D No change in speed or direction
9-24) A
9-25) A Gravity is the force pulling the satellite to the center of the earth causing circular motion.

10-2) B
10-3) C Gravity is a universal force.
10-4,5,6) Figures A and B show the closer together two objects are the stronger the gravitational force.
10-7,8) If three sets of objects are equal distance apart the objects with the greater mass will have the stronger force of gravity.
10-9,10) Larger objects exert a larger gravitational pull.
10-11) Figure D
10-12) The force of gravity continually changes the path of the moon so that it orbits the earth.
10-13) B The amount of friction is dependent on the surfaces and the normal force.
10-14) To reduce friction.
10-15) B The chute increases the force of wind resistance.
10-16) C Terminal velocity is when the force of gravity equals the force of wind resistance.
10-17) D Wheels reduce friction

10-18) C Because of the diagram this is the best answer. But the weight of the box (answer B) is the normal force so it does affect friction.

10-19) B Worn tires are a problem on wet roads because water gets trapped between the tire and the road and acts as a lubricant.

10-20) B

10-21) B Increasing pressure causes air to leave your lungs (higher to lower)

10-22) C

10-23) A

10-24) C This is the same principle that causes lift with plane wings

10-25) B

10-26) A

10-27) D

10-28) B

10-29) C

10-30) B An object will float in a fluid, if its density is less than the fluids density.

10-31) It is more dense than air but less dense than water.

10-32) C

11-1) B Energy is the ability to do work, energy is transferred when work is done.

11-2) C

11-3) If a force does not cause an object to move work is not done.

11-4) C W=F x d 250N x 50 m= 25000J

11-5) A

11-6) A Power = work/time

11-7) C The same amount of work was done but the truck did it in less time(more power.

11-8) B Two ways that simple machines make it easier to do work.

11-9) B Single fixed pulley

Skip (11-10) MA= length/height 3m/.9=3.33 $MA*F_E= F_R$

$3.33* F_E= 2000N$ $F_E= 600.6N$

(11-11) ~~A and B~~ C

11-12) D

Skip (11-13) Where is Tonys ramp?

11-14) C The fat handle gives more mechanical advantage. Wheel and axel.

11-15) A MA= Resistance force/ effort force

11-16) C

11-17) B

11-18) C Increasing the distance reduces the effort force

11-19) Count the number of strands supporting the resistance force.

11-20) D Heat generated due to friction

11-21) B

Section 12-Energy

1) A
2) D
3) C
4) C
5) A GPE=mgh
6) Gpe = mgh (10kg)(9.8m/s^2)(1m)=98J
7) B
8) B
9) B
10) KE=1/2mv^2
11) A KE when the apple if falling and B GPE when the apple is in the tree.
12) A KE as it moves down the hill and GPE when it is on the hill above the lowest point.
13) D
14) B
15) A
16. B
17. D
18.B
19. B
20. C
21. Friction
22. GPE to KE
23. Mechanical To Electrical
24. Striking a bell
25. A
26. D

Section 14- electricity and Magnetism

1. A
2. B
3. A
4. C
5. C
6. C
7. B
8. A
9. There is no complete path (circuit) for the electrons to flow through.
10. From the clothes rubbing against the dryer.(Friction)
11. Series
12. B
13. D
14. C
15. C
16. C
17. B
18. B
19. Generators and motors, electromagnets