Physics: Semester I Exam

Unit Title: Semester I Exam Review

Part I: Physics and Measurement (30 Questions)

1. What is physics?
2. What is a scientific law or principle?
3. What is energy?
4. What is potential and kinetic energy and when does an object have each type of energy?
5. What is matter?
6. How are the units to measure the mass of an object?
7. Know how to convert a number in decimal form to scientific notation.
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9. Know the prefixes in S.I and how to convert between each step.
10. Know how to convert m^3 to cm^3 and know that 1 mL = 1 cm^3
11. Know the difference between precision and accuracy
12. Know how to calculate the weight of object on earth.
13. Know the definition of the meter in the S.I.
14. Know the definition of the kilogram in the S.I.
15. Know what an inversely proportional graph should look like.
16. Know the definition of derived units.
17. Know how to calculate the volume of a block.
18. Know how to calculate density.
19. Know how to figure the correct number of significant figures by all mathematic functions.
20. Know how to find absolute and relative error.
21. Know the different forms of energy and examples of each one.
22. What are the advantages of the S.I.?
23. Know the lab instruments and what each one measures.

Part 2: Motion (30 Questions)

1. Know how to calculate displacement.
2. What is velocity?
3. Know how to calculate average velocity.
4. What is our acceleration due to gravity?
5. What is terminal velocity?
6. Know how to read a distance vs. time graph
7. Know how to read a velocity vs. time graph.
8. Know how to calculate velocity, time and distance from a boat traveling across a river.
9. Know how to find the resultant velocity and direction of a plane and wind acting on each other.
10. Know Newton's threes Laws of Motion.
11. Know Newton's Law of Universal Gravitation.
12. What is true about your weight as you get closer or father from the earth's surface?
13. Know how to calculate your mass and weight on another planet other than earth.
14. Know how to apply and use Newton's 2^{nd} Law of Motion (F=ma)
15. Know how to use the kinematic "who cares" equations.

Part 3 – Forces (40 Questions)

1. Know helpful and harmful uses of fluid friction.
2. What is a force?
3. What does it mean forces in equilibrium?
4. What is friction?
5. Know how to find the resultant of force components that are 0˚ and 180˚ to each other.
6. Know how to find the resultant of force components that are 90˚ each other.
7. Know how to calculate the equilibrant force.
8. What is the difference between a scalar and a vector force?
9. Understand how friction acts with the normal force.
10. Know the characteristics that affect sliding friction.
11. Know the characteristics that affect fluid friction.
12. Which is greater? Stationary (static) or sliding (kinetic) friction.
13. Know how to solve for the forces in a chain and the thrust force in a bracket given a weighted sign.
14. Know how to resolve components with an object located on an incline.
15. Given two components, know how to find the resultant and the direction.