Physics I - Final Exam Review

CHAPTERS 9 and 10

1. What is the place where all the weight of an object seems to be concentrated called?

2. Describe what will happen to a can if you whirl it on the end of the string and the string suddenly breaks

3. Explain why a person cannot stand on their tip-toes when faced against a wall.

4. Why do people spread their feet apart while standing on a bumpy train ride?

5. Two pennies are placed on a turntable. One on the outer edge and one towards the center. Which has greater rotational speed?

CHAPTERS 11 and 19

1. Why are doorknobs placed on the edge of the door rather than the middle?

2. What is the formula for Angular Momentum?

3. Which is slower rolling down a hill a sold ball or hallow ball?

4. What two things determine the pressure on an object in a liquid

5. What happens to the density of a rock that is split in half?

CHAPTERS 32 and 33

1. Describe the force between two charged objects of like signs and two objects with unlike signs.

2. When do objects become electrically charged?

3. What makes an object neutral?

4. What is another name for voltage?

5. Explain the difference between electrical forces and gravitational forces.

CHAPTERS 34 and 35

1. What are the units for...?
Current?
Voltage?
Resistance?
Power?

2. As more electrical devices are placed in a series circuit, what happens to the equivalent resistance?

3. A hair dryer draws 3.0A when connected to a 120V power source. What is the resistance of the hairdryer?

4. What is the power that a computer that draws 5 A from 120V?

5. Explain the difference for current in a series and parallel circuits.

CHAPTERS 36 and 37

1. What happens to a bar magnet when it is broken in half?

2. Where is the magnetic field strength the strongest?
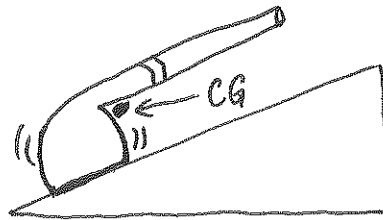
3. What is the source of all magnetism?

4. **What are magnetic domains?**

5. **Name three ways to strengthen and electromagnet.**

Physics – Free Response Study Guide

1. Explain whether or not the pipe will topple.

2. Describe how the stability of an automobile can be *increased* in terms of its center of gravity.

Chapter 11

1. A meter stick is balanced on the 50cm mark. You tie a 20N weight at the 40cm mark. Where should a 40N weight be placed to balance the stick? DRAW A PICTURE.

2. Krystal is an ice skater. She is spinning her with her arms extended outward. She pulls her arms in. Describe the change in:

   a. Rotational Inertia:

   b. Angular Velocity:

   c. Angular Momentum:

Chapter 19

3. Find the _volume_ of a piece of aluminum that has a mass of 12g and a Density of $2.9g/cm^3$?

4. Convert 4.1N to cm^3.

5. A piece of aluminum weights 1.2N in the air. When placed in water it floats.
   a. What is the BF?

   b. What is the weight of water displaced by the aluminum?

6. A piece of metal weighs 3.4N in the air and when 1.2N when submerged under water.
   a. What is the BF that the water exerts on the metal?

   b. What is the weight of the water displaced by the metal?

   c. What is the mass of the water displaced by the metal?

Chapters 32/33

7. How much work is done in moving a 2.5 coulomb charge from one plate of a battery to the other place if the voltage of the battery is 7 volts?

8. 500 Joules of work are done in transferring 10 Coulombs of charge from point A to point B. What is the voltage between the two points?
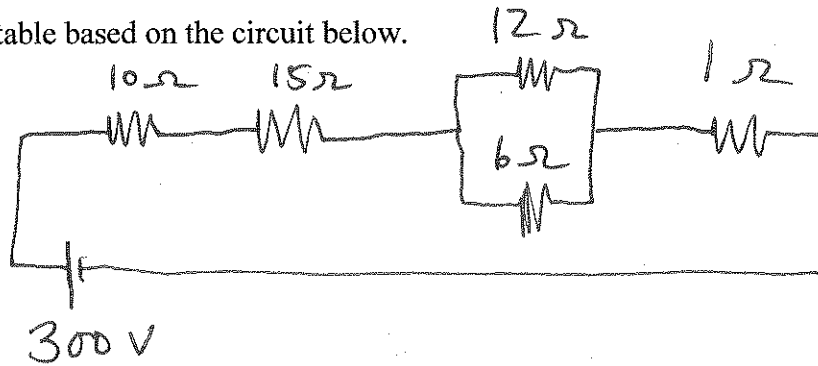
9. Objects become charged because electrons are transferred. Why don't the protons move?

10. What is an electric shield? Give an example.

Chapters 34/35

11. Find the current of a lamp that is connected to a 120V power source and has a resistance of 40 ohms.

12. Complete the table based on the circuit below.

R	I	V	P
10 Ω			
15 Ω			
12 Ω			
6 Ω			
1 Ω			

13. What is the difference between a motor and generator?

14. Draw the magnetic field that surrounds a bar magnet.

15. Explain Faraday's Law in detail.