

Name: _____ Block: _____

ON LEVEL PHYSICS Fall 2018
Final Exam Study Guide
50-52 multiple choice questions

This study guide reflects most of the GSE standards for physics and the Wheeler Physics curriculum. Elements of this study guide, in one form or another, will be integrated into the final examination. Not all content is represented, so re-read and study your past lessons, too. The exam will cover from the midterm exam to the end of the semester (Units 5-7).

WORK, POWER, & ENERGY (~15 questions)

What is work? How is work performed?	
What is power?	
What is gravitational potential energy?	
What is kinetic energy?	
What is the law of conservation of energy?	
What happens to an object's GPE and KE on a roller coaster?	
What is the work-energy theorem?	

WAVES, SOUND, & LIGHT (~20 questions)

What is a mechanical wave? What are the 2 types of mechanical wave?	
What is the relationship between frequency and wavelength?	
What is a standing wave? What are nodes and antinodes?	
How are sound waves generated?	
What is the difference between ultrasonic & infrasonic sound?	
What is pitch? What controls pitch?	
What happens to the frequency and pitch of sound if the object making the sound moves away from you?	
What happens to the frequency and pitch of sound if the object making the sound moves towards you?	
What is a converging lens?	
What is a diverging lens?	

What is diffraction?	
What is reflection? What is the law of reflection?	
What is destructive interference?	
What is constructive interference?	
What are the 7 types of EM wave in the EM spectrum?	
What are the 7 colors of visible light in the visible light spectrum?	
Compare and contrast opaque, translucent, and transparent.	
What is white light? Why do we see white light?	
What is black? Why do we see black?	
How do we see an object's color?	

ELECTRIC CHARGE (~15 questions)

What is an electron?	
What is a proton?	
What is static electricity by friction?	
What is static electricity by induction?	
What is static electricity by conduction?	
What is Coulomb's Law?	
What happens to electric force when distance and charge increase or decrease?	
What is the law of charges?	
What happens if you bring positive charge near negative charge?	

Practice Problems

1. A car has a mass of 500 kg. The car is moving at 12 m/s. Calculate the kinetic energy of the car.
2. The combined mass of a boy on a bicycle is 90 kg. The boy is riding his bicycle at 4 m/s. Calculate the kinetic energy of the boy on the bicycle.
3. A crane hoists a 250 kg steel beam to a height of 20 m above the street. Calculate the work performed to lift the steel beam.
4. Calculate the gravitational potential energy of the beam in question 3.
5. A forklift lifts a 100 kg crate up to a shelf 3 meters above the floor. Calculate the work performed by the forklift to lift the crate.
6. The forklift in question 5 does the work in 6 seconds. Calculate the power exerted by the forklift.
7. A car has a mass of 500 kg. The car is moving at a speed of 16 m/s. Calculate the car's momentum. Calculate the car's KE.
8. Reynaldo pushes a crate with a force of 400 N. The crate moves a distance of 5 meters. Calculate the work performed on the crate.
9. Kevin pushes a crate with a force of 500 N. The crate does not move. Calculate the work performed on the crate.
10. The speed of sound is 343 m/s. The sound wave has a frequency of 3000 hz. Calculate the wavelength. Calculate the period of the wave.
11. The speed of sound is 343 m/s. The wavelength of the sound wave is 0.0552 m. Calculate the frequency.