Physics 11 Exam Overview June 2022

Our will be spread over two days. The written portion will be Friday June 24th. The hands on lab portion will be Monday June 27th. Be prepared to keep yourself busy after you complete your exams. You may silent read, listen to music, or study for another exam.

I will provide you with a formula sheet. A sample is attached.

The questions listed below are a guide for you to study. You may not see every question on this list. You may see additional questions at the A level.

Unit 1 Kinematics

- ➢ 1 problem using the four equations.
- ➢ Cliff problem, a car drives off a cliff.
- ➢ 1 projectile motion problem with the projectile shot at an angle.
- ➢ Construct a distance vs time graph and calculate the slope

Unit 2 Forces

- ➢ Calculate the Fg on an object
- ➢ Calculate the acceleration of a block on a flat surface that is being pulled side ways by a rope pulling sideways with no friction
- ➢ Calculate the acceleration of a block on a flat surface that is being pulled side ways by a rope at an angle, there will be friction on the block
- ➢ Calculate the required thrust on a rocket given the acceleration
- ➢ Calculate normal force
- ➢ Apply Hooke's Law to calculate force or stretch
- ➢ Construct a graph that will allow you to determine the spring constant of an elastic

Unit 3 – Energy

- ➢ Calculate the height a car rolls up a hill using conservation of energy
- ➢ Calculate the speed of a car at the bottom of the hill when some of the original energy is lost due to heat.
- ➢ Calculate how high a motor can lift a mass given the power of the motor and the time it runs for.

Electricity

- ➢ Be able to calculate the equivalent resistance of multiple resistors in series and parallel
- ➢ Be able to apply ohm's law in basic circuits
- ➢ Be able to identify series and parallel circuits
- ➢ Be able to describe the function of fuse, a circuit breaker, and a GFIC
- ➢ Be able to apply Kirchoff's laws in basic circuits

Waves

- ➢ Be able to use Snell's Law to calculate the angle of refraction
- ➢ Be able to describe what interference is and give examples
- ➢ Be able to describe what resonance is and give examples
- ➢ Be able to describe what the Doppler effect is and give an example
- ➢ Be able to describe the frequency of your hearing range and associated terms
- ➢ Be able to describe what diffraction is and give examples (if we get that far)

Lab portion of exam - you will be given one of these tasks to complete

- ➢ Connect a spark tape to a cart and collect data, graph your data, calculate the acceleration of the cart.
- ➢ Using a force scale and a ruler collect data, graph your data, determine the spring constant of the elastic
- ➢ Collect voltage and current data, graph your data, calculate the resistance of provided resistor