

Sharyland ISD Study Guide

Physics Semester 2



Student Name: _____
Student ID: _____

Physics CBE B Review

Aligned with classroom textbook: Texas Physics- *Serway • Faughn*

Exam is a total of 40 multiple choice questions (2.5 points each)

Momentum & Impulse (pg. 192-194)

- Momentum: define & formulate/ calculate (pg. 192-193)
- Momentum is a vector

Conservation of Momentum (pg. 199-201)

- Conserved in collisions
- Conserved from objects pushing away from each other

Elastic & Inelastic Collisions (pg. 206-213)

- Perfectly inelastic collisions
- Elastic collisions

Newton's Law of Universal Gravitation (pg.232-236)

- Gravitational force: define & formulate/ calculate (pg. 233-234)
- Gravitational force between all masses

Properties of Waves (pg. 380-386)

- Medium
- Mechanical wave
- Transverse wave
- Wavelength
- Longitudinal wave
- Speed of a Wave: formulate & calculate (sample problems pg. 385)
- Waves transfer energy

Wave Interactions (pg. 387- 392)

- Constructive interference
- Destructive interference
- Standing waves
- Node & antinodes
- Frequency & standing waves

Sound Waves (406- 415)

- Pitch
- Doppler effect
- Speed of sound in different mediums
- Conversion of intensity to decibel level chart (pg. 415)

Characteristics of Light (pg. 444- 447)

- Electromagnetic waves
 - Oscillating magnetic & electric fields
 - Speed of light (c) = 3.00×10^8 m/s
- Electromagnetic spectrum chart (pg. 445)
- Wave Speed Equation: formulate & calculate (sample problems pg. 446-447)

Flat Mirrors (pg. 449- 452)

- Reflection
 - Texture of a surface affects how it reflects light
- Angle of incidence & angle of reflection
- Flat mirror: figure 2.4 (pg. 450)

Curved Mirrors (pg. 453- 461)

- Concave spherical mirror
- Real image
- Convex spherical mirror

Refraction (pg.484- 489)

- Refraction
- Index of refraction

Electric Charge (pg. 550- 555)

- Electrical conductors
- Electrical insulator
- Induction
- Properties of electric charge
 - Like charges repel
 - Unlike charges attract
 - Charge of atomic particles (pg. 552)
- Transfer of electric charge
 - Contact
 - Induction
 - Polarization

Current & Resistance (pg.601- 603)

- Resistance depends on:
 - length, area, material, and temperature
- Resistance: formulate/ calculate (sample problems pg. 602- 603)

Resistors in Series or in Parallel (pg. 637- 646)

- Series circuit
 - Resistors in Series: formulate & Calculate (sample problems pg. 639-640)
- Parallel circuit
 - Resistors in Parallel: formulate & Calculate (sample problems pg. 644-645)

Complex Resistor Combinations (pg. 647- 649)

- Resistors combined in both series & parallel
- Calculate the equivalent resistance for complex circuit (sample problems pg. 648-649)

Magnets & Magnetic Fields

- Magnetic domains
- Magnetic field
- How to make a permanent magnet
- Bar magnetic fields vs. earth's magnetic field

Generators, motors, and mutual inductance (pg. 702- 703)

- Generators produce a continuous charging emf
- Induction of an emf: figure 2.2 (pg. 703)

Models of the Atom (pg. 746- 749)

- Emission spectrum
- Adsorption spectrum
- Understand figures 2.6 & 2.7 on pg. 748-749

The Nucleus (pg. 774- 776)

- Isotopes
- Strong force
- Binding energy
 - Define the mass of a nucleus

Nuclear Reactions (pg. 791-794)

- Fission vs. Fusion
 - Define both & know the outcome of both reactors