



Final Exams : June 2011

Please place on this sheet the contents of your course that you will be examining in your Final Exam. Details are expected. Chapter numbers, section headings and the like. Please type using this template and then email the template to me using all the syntax details from the PDF filename that I have spelt out in the email that this came attached to.

Teacher : Sami Nass	Subject : Physics 115
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Chapter 1: **Stroboscopy.**

Use of stroboscopes.
Persistence of vision.

Chapter 5: **Kinematics.**

Trajectories.
Displacement, Position, Velocity & Acceleration Vectors.
Normal & Tangential accelerations.
Circular Motion. Centripetal & Centrifugal Accelerations.

Chapter 6: **Dynamics.**

Statics.
Inclined Planes.
Projectiles.
Satellite Motion.
"g"-Forces.

Chapter 7: **Mechanical Energy.**

Kinetic + Elastic + Gravitational.
Conservative & non conservative systems.
Work & Friction.

Chapter 8: **System of Particles.**

Rigid & Deformable.
Centre of Mass (gravity)
Motion of the centre of mass.

Chapter 9: **Rotational Dynamics.**

Equilibrium.
Inertia.
Moment of Inertia.
Newton's 2nd law for Rotational Dynamics.

Chapter 10: Electric Fields.

Vectorial Addition of Electric Fields.
Milliken's Oil Drop.
Work from plate to plate.
Electric field Spectra

Chapter 11: Capacitors.

Capacitance.
Charging & Discharging of a Capacitor.
Decay & Growth of the voltage across a capacitor.
Currents in Capacitors.
Capacitors behaving as open switches.
Energy stored.
Time Constant (τ)

Chapter 12: Magnetism.

Earth's Magnetism. Terrestrial Field.
Vectorial Addition of fields.
Magnetic Flux.
Electromagnetic Induction.

Chapter 13: Magnetic Fields Created by Currents.

Long Wires-Flat Coils-Solenoids.
Right Hand Rule (Bon home d' Ampere)

Chapter 14: Electro Magnetic Forces

Laplace's Force.
Right Hand Rule (Fleming's Rule using left)
Barlow's Wheel
Laplace's rails
DC motor.

Chapter 15: Motion of Charged Particles in Magnetic & Electric Fields

Cyclotrons.
Linear Accelerators.
Lorentz Force.
Motion of Charged Particles in Uniform Magnetic Fields
Motion of Charged Particles in Uniform Electric Fields