

# Lebanon Evangelical School for Boys and Girls

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## Final Exams : May 2010

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 the following syntax in the Subject header of the email : TaughtSubject : Class. Thus if I were sending details of Maths in 7A the subject of the email would be : "Maths : 7A"

Teacher : Sami Nasr

Subject : Physics, Class 11S

### Chapter 1: **Stroboscopy.**

Use of stroboscopes.  
Persistence of vision.  
In-phase & in-opposition of phase motion.

### Chapter 2: **Superposition of waves.**

Longitudinal & Transverse waves.  
Interference of waves.  
Constructive & destructive superposition.  
Resonance.  
Melde's experiment (nodes & antinodes)

### Chapter 3 & 4: **Emission, Propagation & Reception of sound.**

Emission of sound by humans & by loudspeakers.  
Propagation of sound in different mediums. (Gases, liquids...)  
Reception of sound by the human ear & by microphones.  
Functioning of Loudspeakers & Microphones.  
Applications of Infrasound & Ultrasounds. (Piezoelectric ...)

### Chapter 5: **Kinematics.**

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

### Chapter 6: **Dynamics.**

Statics.  
Inclined Planes.  
Projectiles.  
Mechanical Energy. Kinetic + Elastic + Gravitational.  
Conservation of Mechanical Energy.  
Work & Friction.  
Satellite Motion.

“g”-Forces.  
Circular Motion.

**Chapter 7: System of Particles.**

Rigid & Deformable systems.  
Centre of Mass of a stationary system.  
Centre of Mass of a system in motion.

**Chapter 8: Rotational Dynamics.**

Inertia.  
Moment of Inertia.  
Torque.  
Power.  
Angular Acceleration.  
Newton's 2<sup>nd</sup> law for Rotational Dynamics.

**Chapter 9: Electric Fields.**

Uniform & Radial fields.  
Vectorial Addition of Electric Fields.  
Milliken's Oil Drop.  
Work from plate to plate.  
Break Down Potential.

**Chapter 10: 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 ( $\tau$ )

**Chapter 11: Magnetism.**

Earth's Magnetism. Terrestrial Field.  
Angles of Inclination & Declination.  
Magnetic Flux.  
Lenz & Faraday's Laws of Electromagnetic Induction.

**Chapter 12: Magnetic Fields Created by Currents.**

Long Wires-Flat Coils-Solenoids.  
Vectorial Addition of Magnetic Fields Fields.  
Right Hand Rule.

**Chapter 13: Electro Magnetic Forces**

Laplace's Force.  
Right Hand Rule (Flemming's Rule using left)  
Barlow's Wheel

Chapter 14: **Motion of Charged Particles in Magnetic & Electric Fields**

Cyclotrons.

Linear Accelerators.

Lorentz Force.

Lorentz Transformation.

Motion of Charged Particles in Uniform Magnetic Fields.

Motion of Charged Particles in Uniform Electric Fields.