Syllabus Analysis
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It is compared between KTSP with GCE-O and A Level

Subject : Physics
Class / Semester : X / I

TOPIC	KTSP	O-LEVEL
Physics quantities and units	√	√
Measurement		
• Length	√	√
• Mass	√	√
• Temperature		√
• Time	√	√
• Current		√
• Amount of substance		√
Scalar and Vector		
• Distinguish scalar and vector quantities and example	√	√
• addition vector	√	√
• vector components	√	√
• Resultant vector	√	√
Kinematics		
• Distance, displacement, velocity and acceleration	√	√
• Motion with constant velocity (GLB)	√	√
• Motion with constant acceleration (GLBB)	√	√
Circular Motion		
• Angular displacement	√	√
• Frequency	√	
• Period	√	
• Linear and angular velocity	√	√
• Centripetal acceleration, centripetal force	√	√
• Wheels connection motion	√	
• Displacement with constant angular	√	
Dynamics		
Newton I Law	√	√

Newton II Law Newton III Law Newton's Law application	√ √ √	√

Subject : Physics
Class / Semester : X / II

TOPIC	KTSP	O-LEVEL
Optic Tools		
• Eyes	√	
• Sunglasses	√	
• Lup	√	
• Microscope	√	
• Telescope	√	
Temperature		
• Celcius	√	√
• Fahrenheit	√	√
• Reamur	√	√
• Kelvin	√	√
• Black asas	√	√
• Transfer of thermal energy	√	
Electrical		
• Voltmeter	√	√
• Amperemeter	√	√
• Series and parallel resistance combination	√	√
• Calculate resistance, voltage and current	√	√
• kirchoff I Law	√	√
• kirchoff II Law	√	√
• Electrical application in life	√	√
Electromagnetic Waves		
• Electromagnetic spectrum	√	√
• Frequency and wavelength	√	√
• Electromagnetic waves application in life	√	√

Syllabus analysis

Subject : Physics
Class / Semester : XI / I

TOPIC	KTSP	O-LEVEL
Motion Equation		
• Position, velocity and acceleration with vector	√	
• Parabola motion	√	
• Position, velocity, acceleration in angular motion	√	√
• Kinematics in angular motion	√	√
• Linear and angular relation	√	√
Friction force		
• Advantage and loss	√	√
• Static and dynamic friction	√	
• Application in area	√	
• Application in the curve street	√	
Gravitation		
• Gravitation Law	√	√
• Field gravitation	√	√
• Application	√	√
Elasticity		
• Distinguish elastic and plastic		
• Stress, strain, modulus young	√	√
• Hooke's Law	√	√
• Series and parallel	√	√
• Oscillation of spring	√	
	√	√
Work and energy		
• Work and application to resolve problem		
• Potential, kinetic, mechanics energy	√	√
• Energy Conservation and application	√	√
• Power	√	√
	√	
Momentum and Impulse		
• Momentum and impulse concept		
• $I = \Delta P$	√	√
• Collide	√	√
	√	√

• Conservation of momentum • Integrated conservation energy law and conservation of momentum	√ √	√ √

Subject : Physics
Class / Semester : XI / II

TOPIC	KTSP	A-LEVEL
Rotation Dynamics		
Torsi	√	√
Inertia	√	√
Kinetic and potential rotation	√	
Energy of Conservation	√	√
Conservation of Momentum angular	√	
Rigid body		
Rigid body balance and application	√	
Heavy point and application	√	

Balance characteristic	√	
Static Fluid		
Hydrostatic pressure	√	√
Pascal's Law	√	
Archimedes Law	√	
Surface tension, viscosity, terminal voltage	√	
Dynamic fluid		
Kontinuitas equation	√	
Bernoulli Law and application	√	
Ideal gasses		
equation of ideal gasses at isotermik, isokhorik and isobarik process	√	√
Pressure, kinetic energy, velocity in ideal gasses	√	√
Internal Energy	√	√
Thermodynamics		
Thermodynamics I Law	√	√
Work in thermodynamics	√	√
Heat capacity	√	√
Thermodynamics II Law	√	
Carnott engine	√	

Subject : Physics
Class / Semester : XII / I

TOPIC	KTSP	A-LEVEL

Waves		
speed, frequaency, wavelength and amplitude	√	√
transverse and longitudinal waves	√	√
Stationer wave	√	√
Wave characteristics	√	√
Electromagnetic wave		
Electromagnetic Spectrum	√	√
Equation	√	√
Interference, diffraction, polarisasi	√	√
Doppler	√	
Mechanic wave		
Wavelength (solid, liquid, gasses)	√	√
Frequency	√	√
Sound source and application	√	√
Intensity and intensity level	√	√
Doppler effect	√	
Static electricity		
Load interaction	√	
Coloumb's Law	√	√
Field electricity	√	√
Gauss Law	√	
Potential and field electricity	√	√
Conservation of energy	√	√
Conductor of ball	√	
Capacitor		
Type, way of job, equation	√	√
Series and parallel	√	√
Energy	√	√
Magnetic Field		
Magnetic induction (toroid, solenoid, lines, circular)	√	√
Lorentz Law and application	√	√
Siklotron	√	
Electromagnetic induction		
Flux	√	√
Ggl	√	√
Lenz law	√	√

Trafo, generator	√	√
Induktansi	√	
Close energy	√	
Alternating currents		
Effective and maximum value	√	√
Measuring instrument	√	√
Reaktansi (induktif, kapasitif, resistif)	√	
Impedansi RLC	√	
Power	√	√

Subject : Physics
Class / Semester : XII / II

TOPIC	KTSP	A-LEVEL
Black Object Radiation		
Stefan Boltzman	√	
Wien	√	
Planck	√	√
Fotolistrik effect	√	√
Compton effect	√	
de broglie	√	√
Atomic Physics		
Demokritus	√	
Dalton	√	
Thompson	√	
Rutherford	√	
Bohr	√	
Kuantum number	√	
Orbital admission filling	√	
Ionisasi energy	√	
Relativity		
Mass	√	
Energy	√	
Momenyum	√	
Length	√	
Time	√	
Nuclear physics and radioactivity		
Atomic nucleus	√	√
Radioactivity rays	√	√
Mass excess and nuclear binding energy	√	√
Time of Paroh, activity, absorbent dose	√	√
Siklotron	√	
Nuclear reactions	√	√
Radioisotope application	√	√
Nuclear reactor	√	