Physics CET

Sr	Topic	SubTopic
1	LAWS OF MOTION	Introduction
2		Aristotles Fallacy
3		Newton's Laws of Motion
4		Inertial and Non-inertial Frames of reference
5		Types of Forces
6		Work Energy Theorem
7		Principle of Conservation of Linear Momentum
8		Collisions
9		Impulse of a Force
10		Rotational Analogue of Force-moment of Force or Torque
11		Couple and it's Torque
12		Mechanical Equilibrium
13		Centre of Mass
14		Centre of Gravity
15	GRAVITATION	Introduction
16		Keplers Laws
17		Universal Law of Gravitation
18		Measurement of the Gravitational Constant
19		Acceleration due to Gravity
20		Variation in the Acceleration due to Gravity with Altitude, Depth, Latitude and Shape
21		Gravitational Potential and Potential Energy
22		Earth Satellites
23	SEMICONDUCTORS	Introduction/Electrical Conduction in Solids
24		Band Theory of Solids a brief introduction
25		Intrinsic Semiconductor
26		Extrinsic Semiconductor
27		P-N Junction
28		P-N Junction Diode
29		Semiconductor Devices
30		Applications of Semiconductors and P-N Junction Diode
31	THERMAL PROPERTIES OF MATTER	Introduction/Temperature and Heat
32		Measurement of Temperature
33		Absolute Temperature and Ideal Gas Equation
34		Thermal Expansion
35		Specific Heat Capacity
36		Colorimetry
37		Change of State
38		Heat Transfer

39		Newtons Law's of Cooling
40	SOUND	Introduction/Common Properties of all Waves
41		Transverse Waves and Longitudinal Waves
42		Mathematical Expression of a Wave
43		The Speed of Travelling Waves
44		Principal of Superposition of Waves
45		Echo, Reverberation and Acoustics
46		Qualities of Sound
47		Doppler Effect
48	OPTICS	Introduction/Nature of Light
49		Ray Optics or Geometrical Optics
50		Reflection
51		Refraction
52		Total Internal Reflection
53		Refraction at a Spherical Surface and Lenses
54		Dispersion of Light and Prisms
55		Some Natural Phenomena due to Sunlight
56		Defects of Lenses
57		Optical Instruments
58	ELECTROSTATICS	Introduction/Electric Charges
59		Basic Properties of Electric Charge
60		Columb's Law
61		Principle of Superposition
62		Electric Field
63		Electric Flux
64		Gauss's Law
65		Electric Dipole
66		Continues Charge distrubution
67	ROTATIONAL DYNAMICS	Introduction/Characteristics of Circular Motion
68		Application of Uniform Circular Motion
69		Vertical Circular Motion
70		Moment of Inertia as an Analogous Quantity for Mass
71		Radius of Gyration
72		Theorem of Parallel Axes and Theorem of Perpendicular Axes
73		Angular Momentum or Moment of Linear Momentum
74		Expression for Torque in Terms of Moment of Inertia
75		Conservation of Angular Momentum
76		Rolling Motion
77	MECHANICAL PROPERTIES OF FLUIDS	Introduction/
78		Fluid
79		Pressure
80		Surface Tension

81		Fluids in motion
82		Critical Velocity and Reynolds number
83		Stokes law
84		Equation of continuety
85		Bernoulli equations
86		Application of Bernoulli
87	KINETIC THEORY OF GASES AND RADIATION	Introduction/Behaviour of a Gas
88		Ideal gas and real gas
89		Mean free path
90		Pressure in ideal gas
91		Root Mean Square Speed
92		Interpretation of Temperature in Kinetic Theory
93		Law of Equipartition of Energy
94		Specific Heat Capacity
95		Aabsorption, Reflection and Transmission of Heat Radiation
96		Perfect Blackbody
97		Emission of Heat Radiation
98		Kirchhoff's Law of Heat Radiation and its Theoretical Proof
99		Spectral Distribution of Blackbody Radiation
100		Stefan-Boltzmann Law of Radiation
101	THERMODYNAMICS	Introduction/Thermal Equilibrium
102		Zeroth Law of Thermodynamics
103		Heat, lnternal Energy and Work
104		First Law of Thermodynamics
105		Thermodynamic state variables
106		Thermodynamic Process
107		Heat Engines
108		Refrigerators and Heat Pumps
109		Second Law of Thermodynamics
110		Carnot Cycle and Carnot Engine
111		Sterling Cycle
112	Oscillation	Introduction/Explaination of Periodic Motion
113		Linear Simple Harmonic Motion
114		Differential Equation of SHM

115		Acceleration, Velocity and Displacement of SHM
116		Amplitude, Period and Frequency of SHM
117		Refrence Circle Method
118		Phase in SHM
119		Graphical Representation of SHM
120		Composition of two SHM having same Period and along the same path
121		Energy of Particle Performing SHM
122		Simple Pendulum
123		Angular SHM and its Differential Equation
124		Damped Oscillations
125		Free Oscillations, Forced Oscillations and Resonance
126	SUPERPOSITION OF WAVES	Introduction/Properties of Progressive Waves
127		Reflection of Waves
128		Superposition of Waves
129		Stationary Waves
130		Free and Forced Vibrations
131		Harmonics and Overtones
132		Sonometer
133		Beats
134		Characteristics of Sound/Musical Instruments
135	WAVE OPTICS	Introduction/Nature of Light
136		Light as a Wave
137		Huygens' Theory
138		Reflection of Light at a Plane Surface
139		Refraction of Light at a Plane Boundary Between Two Media
140		Polarization
141		Interference
142		Diffraction of Light
143		Resolving Power
144	CURRENT ELECTRICITY	Introduction/Kirchhoff's Law of Electrical Network
145		Wheastone Bridge
146		Potentiometer
147		Galvanometer
148	12th-Electrostatic	Introduction/Application of Gauss Law
149		Electric Potential and Potential Energy
150		Electric Potential Due to a Point Charge, a Dipole and a System of Charges
151		Equipoential Surfaces
152		Electrical Energy of Two Point Charges and of a Dipole in an Electrostatic Field
153		Conductors and Insulators, Free Charges and Bound Charges Inside a Conductor

154		Dielectrics and Electric Polarisation
155		Capacitors and Capacitance, Combination of Capacitors in Series and Parallel
156		Capacitance of a Parallel Plate Capacitor without and with Dielectric Medium Between the Plates
157		Displacement Current
158		Energy Stored in a Capacitor
159		Van de Graaff Generator
160	MAGNETIC FIELDS DUE TO ELECTRIC CURRENT	Introduction/Magnetic Force
161		Cyclotron motion / Helical motion
162		Magnetic Force On a Wire Carrying a Current
163		Force on a Closed Circuit in a Magnetic Field
164		Torque on a Current Loop
165		Magnetic Dipole Moment
166		Magnetic Potential Energy of a Dipole
167		Magnetic Field due to a Current
168		Force Of Attraction Between Two Long Parallel Wires
169		Magnetic Field Produced by a Current in a Circular Arc of a Wire
170		Axial Magnetic Field Produced by Current in a Circular Loop
171		Magnetic Lines For a Current Loop
172		Ampere's Law/application
173	MAGNETIC MATERIALS	Introduction/Torque Acting on a Magnetic Dipole in a Uniform Magnetic Field
174		Origin of Magnetism in Materials
175		Magnetization and Magnetic Intensity
176		Magnetic Properties of Materials
177		Hysteresis
178		Permanent Magnet an Electrmagnet/Magnetic Shielding
179	ELECTROMAGNETIC INDUCTION	Introduction/Faraday's Laws of Electromagnetic Induction
180		Lenz's Law/flux of Fields
181		Motional Electromotive Force
182		Induced EMF in a stationary Coil in Changing Magnetic Field
183		Generators

184		Back EMF and back Torque
185		Eddy Currents
186		Self inductance
187		Energy Stored In a Magnetic field
188		Energy Density of a Magnetic Field
189		Mutual inductance
190		Transformer
191	AC CIRCUITS	Introduction/ ac generator
192		Average and RMS values/ phasor
193		Different Types AC Circuits
194		Power in AC Circuit
195		LC Oscillations
196		Electric Resonance
197		Sharpness of Resonance/choke coil
198	DUAL NATURE OF RADIATION AND MATTER	Introduction/The Photoelectric Effect
199		Wave-Particle Duality of Electromagnetic Radiation
200		Photo Cell/
201		De-Broglie hypothesis
202		Davisson and Germer Experiment
203		Wave-Particle Duality of Matter
204	STRUCTURE OF ATOMS AND NUCLEI	Introduction
205		Thomson's Atomic Model/Geiger-Marsden Experiment
206		Rutherford's Atomic Model
207		Atomic Spectra
208		Bohr's Atomic Model
209		Atomic Nucleus
210		Nuclear Binding Energy
211		Ratioactive Decays
212		Law of Ratioactive Decay
213		Nuclear Energy
214	12th-semiconductor	Introduction/
215		P-N Junction Diode as Rectifier
216		Special Purpose Junction Diodes
217		Bipolar Junction Transistor
218		Logic Gates
219	motion in plane	Introduction
220		Rectilinear Motion
221		Motion in two dimensions-motion in plane
222		Uniform circular motion