1.) Temperature, Heat, and the First Law of Thermodynamics
   A.) Temperature
   B.) Zeroth law of thermodynamics
   C.) Celsius and Fahrenheit scales
   D.) Thermal expansion
   E.) Temperature and heat
   F.) Absorption of heat by solids and liquids
   G.) Heat and Work, First law of thermodynamics
   H.) Thermodynamic processes

2.) Kinetic Theory of Gases
   A.) Avogadro’s number
   B.) Ideal gases
   C.) Pressure, temperature and RMS speed
   D.) Translational kinetic energy
   E.) Molar specific heats of an ideal gas
   F.) Degrees of freedom and molar specific heats

3.) Entropy and the Second Law of Thermodynamics
   A.) Irreversible processes and entropy
   B.) Change in entropy
   C.) Second law of thermodynamics
   D.) Entropy and engines
   E.) Entropy and refrigerators

4.) Electric Charge
   A.) Electric charge
   B.) Conductors and Insulators
   C.) Coulomb’s law
   D.) Quantization and conservation of charge

5.) Electric Fields
   A.) Electric fields
   B.) Electric field lines
   C.) Electric field due to a point charge
   D.) A point charge in an electric field
   E.) Gauss’ law
   F.) Electric fields and conductors
6.) Electric Potential
   A.) Electric potential energy
   B.) Electric potential
   C.) Equipotential surfaces
   D.) Potential due to a point charge
   E.) Potential due to a group of point charges
   F.) Electric potential energy of a system of point charges
   G.) Capacitance
   H.) Energy stored in an electric field
   I.) Capacitors with a dielectric

7.) Current and Resistance
   A.) Electric current
   B.) Resistance and resistivity
   C.) Ohm’s law
   D.) Power in electric circuits

8.) Circuits
   A.) Work, energy and EMF
   B.) Calculating the current in a single loop circuit
   C.) Potential difference between two points in a circuit
   D.) Multiloop circuits and Kirchoff’s rules
   E.) RC circuits

9.) Magnetic Fields
   A.) The definition of B and force on a moving charge
   B.) A circulating charged particle
   C.) Mass spectrometer
   D.) Magnetic force on a current-carrying wire
   E.) Torque on a current loop
   F.) Ampere’s law
   G.) Sources of magnetic fields

10.) Induction and Inductance
    A.) Faraday’s law of induction
    B.) Lenz’s law
    C.) Induction and energy transfers
    D.) Induced electric fields
    E.) Inductors and inductance
    F.) Self-induction and mutual inductance
    G.) Energy stored in a magnetic field
11.) Alternating Current
   A.) Capacitors and capacitive reactance
   B.) Inductors and inductive reactance
   C.) Circuits containing resistance, capacitance and inductance

12.) Electromagnetic Waves
   A.) Nature of electromagnetic waves
   B.) The electromagnetic spectrum
   C.) Energy carried by electromagnetic waves
   D.) Doppler effect and electromagnetic waves
   E.) Polarization
   F.) Reflection and refraction
   G.) Total internal reflection

13.) Images
   A.) Images formed by plane mirrors
   B.) Images formed by spherical mirrors
   C.) Spherical refracting surfaces
   D.) Thin lenses
   E.) Optical instruments, human eye

14.) Interference
   A.) Light as a wave
   B.) Diffraction
   C.) Young’s interference experiment
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15.) Diffraction
   A.) Diffraction and the wave theory of light
   B.) Diffraction by a single slit, locating minima
   C.) Diffraction gratings, resolving power