5. Definition of units, coulomb, ohm, volt, ampere, milliampere; principle and construction of apparatus for measurage of amperage, milliamperage, voltage (galvanometer, ammeter, milliameter, voltmeter).
6. Connection of cells in series and parallel; effects of E.M.F. and intensity. Connection of conductors in series and parallel.
7. Portable batteries of cells. Construction. Connections. Single and double collectors. Testing of polarity. Care of battery.
8. Passage of current through solutions. Why solutions conduct. Elementary chemistry. Acids, bases, and salts. Migration of ions with current.
9. Passage of current through the body. Why the tissues of the body conduct. Migration of ions in tissue fluids. Electrodes, anode and cathode. Migrations of ions from electrodes into body; their effect and ultimate fate.
10. Therapeutic uses of direct current. Effect on which these are based. Technique and risks involved. Conditions susceptible of deriving benefit from direct current application.

The Faradic Current.

Theory of production of currents by induction. Circuit diagram and construction of induction coil. Nature of primary and secondary faradic currents. Explanatory diagrams of these currents. Types of modern induction coil. Application of faradic currents to the body. Electrodes. Action of faradic currents on the body; action of muscles and nerves. Therapeutic uses. Conditions susceptible of deriving benefit from treatment with faradic currents.

Sinusoidal Currents.

Definition. Explanatory wave-form diagram. How produced. Source from mains and apparatus of the Pantostat type. Electrodes. Methods of application to body. Action on muscles and nerves. Therapeutic uses.

Modified Currents.

(*a*) Interrupted and surged; modes of interrupting and surging. Meaning of stabile and labile. Action on muscles. Production of local and general muscular exercise. Technique.

(*b*) Conditions susceptible of deriving benefit from treatment with modified currents.

Superimposed Currents.

Explanatory diagrams of resulting E.M.F. and current wave-forms. Diagrams of combined circuits. De Watteville switch. Indications for uses of superimposed—

(*a*) Faradic and direct currents.
(*b*) Sinusoidal and direct currents.

Currents from the Main.

Direct current (D.C.), alternating current (A.C.). Comparison of D.C. from mains with D.C. from battery. Identity of A.C. and sinusoidal current. Derivation of currents from mains for therapeutic uses. Description of medical switchboard. Potential divider (shunt rheostat), galvanoset, ionostat. Risks associated with derivation of currents from the main; how they arise and how avoided, with particular reference to full-length and Schnee bath.

Electrical Reactions.

Meaning of terms "normal reaction" and "reaction of degeneration" (reaction of incomplete and complete degeneration, also absence of reaction in absolute degeneration). Meaning, significance, and location of motor points.

Heat.

Application of heat as an adjunct to electro-therapy by means of radiant heat—electrical heat pads, heat baths, &c. Construction of apparatus. Technique of application and risks incurred and how avoided.