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EXAMPLES.

12. The E. M. F. of a cell is to be measured by Law's condenser method. A Grove's cell is used as a standard, and the corrected deflection is 190 divisions. The corrected deflection with the experimental cell is 100 divisions. What shunt should be applied to the galvanometer, whose resistance 18 7,100 ohms, in order that the deflections may be more nearly equal?

13. It is found by trial that a certain battery can just fuze 3.8 inches of the standard 0.0014'' iridio-platinum wire. What is the E.M.F. of the battery, given that its liquid resistance is 0.8 ohm. Through what length of Service cable (7-strand) could the battery fire one No. 14 fuse ?

14. What diminution, in webers, does the introduction of a No. 14 fuze cause in the current flowing through the 2-ohm coil of a 3-coil galvanometer, produced by a Leclanché test-cell whose liquid resistance is 15 ohms?

15. The resistance between two points in a circuit, through which a powerful current is flowing is 0.5 ohm. A box of coils and a reflecting galvanometer, whose resistance is 5,000 ohms, are connected in simple circuit to these points. The galvanometer has a shunt of $\frac{1}{999}$ ohms applied, and a resistance of 8,000 ohms is unplugged in the box of coils. The deflection of the galvanometer is then 100 divisions. Find the strength of the current, given that the deflection of the galvanometer, caused by a standard cell whose E.M.F. is 1.07 volt, is 200 divisions, when a shunt of $\frac{1}{999}$ is applied, and the resistance in circuit is 4280 ohms.

16. A circuit is formed of No. 20 B.W.G. copper wire whose conductivity is 88.6 p.c. that of pure copper wire. The difference of potential between two points, 50 yards apart, is found to be 2.83 volts. Find the strength of the current.

17. A fine platinum wire whose resistance is 2 ohms at $5^{\circ}C$ is placed in a glass vessel containing 100 c.c. of distilled water. A thermometer is introduced and a certain current is passed through the wire for 5 minutes and it is found that the temperature of the water is raised from 12° to 18° C. Find the strength of the current.