



**ACROSS**

- 3 A \_\_\_\_\_ is an electromechanical transducer that produces a rotary deflection, through a limited arc, in response to electric current flowing through its coil.
- 6 The \_\_\_\_\_ point of a ferromagnetic material is the temperature above which it loses its characteristic ferromagnetic ability.
- 8 A \_\_\_\_\_ is a type of particle accelerator in which a perpendicular magnetic field causes the particles to spiral almost in a circle so that they re-encounter the accelerating voltage many times.
- 9 \_\_\_\_\_'s circuital law relates the circulating magnetic field in a closed loop to the electric current passing through the loop.
- 10 Resulting from changes in the orbital motion of electrons, \_\_\_\_\_ is a weak repulsion from a magnetic field only exhibited by a substance in the presence of an externally applied magnetic field.
- 12 The \_\_\_\_\_ is the cgs unit of magnetic field.
- 15 A closed circulation of electric current creates a \_\_\_\_\_ dipole.
- 16 \_\_\_\_\_ is a form of magnetism which occurs only in the presence of an

- externally applied magnetic field, but unlike ferromagnetism, does not result in any retained magnetization.
- 18 Force The \_\_\_\_\_ is the force exerted on a charged particle in an electromagnetic field referring to the combined effects of any electric field and magnetic field.
- 19 \_\_\_\_\_ is the state when the material cannot absorb a stronger magnetic field, such that an increase of magnetization force produces no significant change in magnetic flux density.
- 20 \_\_\_\_\_ is the degree of magnetization of a material that responds linearly to an applied magnetic field.
- 21 The \_\_\_\_\_-Savart Law is an equation in electromagnetism that describes the magnetic field vector B in terms of the magnitude and direction of the source electric current, the distance from the current, and the magnetic permeability.
- 22 The \_\_\_\_\_ constant is equal to the vacuum permeability, also known as the permeability of free space.

**DOWN**

- 1 \_\_\_\_\_ is defined as the phenomenon by which materials, such as iron, in an external magnetic field become magnetized and remain magnetized for a

- period after the material is no longer in the field.
- 2 \_\_\_\_\_ is the study of static magnetic fields.
- 4 The magnetic dipole \_\_\_\_\_ is a measure of the strength of a magnetic source.
- 5 A \_\_\_\_\_ is a type of magnet in which the magnetic field is produced by the flow of an electric current.
- 7 Magnetic \_\_\_\_\_s permeate space around electric currents, magnetic dipoles, and changing electric fields, exerting a magnetic force on moving electric charges and magnetic dipoles.
- 11 \_\_\_\_\_ is a property of some materials that describes to what extent they are affected by magnetic fields and what magnetic field the material itself creates.
- 13 \_\_\_\_\_ is the magnetization left behind in a medium after an external magnetic field is removed.
- 14 The \_\_\_\_\_ is the SI derived unit of magnetic field.
- 17 The \_\_\_\_\_ center is a point around which the motion in a magnetic field of an electrically charged particle can be treated as the superposition of a relatively fast circular motion and a relatively slow drift of this point.