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virulent

subjective in that it appears to form where an image could not possibly exist because rays do not actually intersect at the image point (Physics Regents Syllabus). b having to do with or designating a focus forming such an image.

2 Nuclear Physics. being too transient to be detected or observed directly: *A virtual photon can have very different properties from a real one. A real photon is one that is flying free and can be detected, in a light beam or an X-ray beam, for instance. A virtual photon is one that is emitted and absorbed so quickly that its existence cannot be detected (Dietrick E. Thomsen).*

virulent (vir'yə lənt or vir'ə lənt), *adj. Biology.* able to cause disease by breaking down the protective mechanisms of the host: *Both rust and smut resistance in host plants frequently comes to be of little avail when new, more virulent strains of the parasite arise (Emerson, Basic Botany).* [from Latin *virulentus*, from *virus* poison] —**virulently**, *adv.*

—**virulence**, *n.* the degree to which an infectious microorganism is able to break down the protective mechanisms of its host.

virus, *n. Biology.* **1** any of a large group of disease-producing agents that are smaller than bacteria, are composed of a core of RNA or DNA and an outer coat of protein, and are dependent upon living cells for their reproduction and growth. Viruses are shaped like rods or spheres and range in size from about 10 to 250 nanometers. They are able to infect almost all types of organisms, including bacteria, and cause such diseases as rabies, measles, polio, influenza, chicken pox, and the common cold. *When we consider the reproduction of viruses we are in quite a dilemma. We know that viruses can form crystals and that objects that form crystals (such as table salt, ordinary sugar, dry ice, asbestos and diamond, to mention a few) are not considered to be examples of life. Yet we also know that in certain situations (usually when they are inside living cells) viruses behave very much like living things; certainly they reproduce like living things (Robert W. Menefee). The likelihood that viruses are fundamental causative agents in many mammalian cancers has implications for diagnosis, for immunological treatment, and for cancer prevention (Michael J. Brennan).* Compare **echovirus**, **oncornavirus**, **papovavirus**, **slow virus**. See also **bacteriophage**.

2 any disease caused by a virus, such as tobacco mosaic in plants, distemper in dogs, foot-and-mouth disease in cattle, and hepatitis and yellow fever in human beings: *The place of gripe can never be filled by ... the new viruses, which last a mere thirty-six hours and are common in every sense (Harper's).* [from Latin *virus* poison]

viscera (vis'ə rə), *n., pl. of viscus. Anatomy.* the soft internal organs of the body, especially of the abdominal cavity, including the heart, stomach, liver, intestines, kidneys, etc.: *Most of the abdominal and pelvic viscera ... are covered with a serous membrane called the peritoneum (Edwards, Concise Anatomy).* [from Latin] —**visceral**, *adj.* of, having to do with, or in the region of the viscera: *The second type of muscle in the frog's body is the smooth or visceral muscle. ... The name visceral is given because it is found primarily in the visceral organs (Winchester, Zoology).* —**viscerally**, *adv.*

viscid (vis'id), *adj. Botany.* covered with a sticky secretion, as leaves. [from Late Latin *viscidus*, from Latin *viscum* birdlime]

viscoelastic (vis'kō i las'tik), *adj. Physics.* having the properties of viscosity and elasticity: *Silicone putty is ... viscoelastic. A ball of it will bounce, but when left on a table for a few hours the same ball will flow under the force of gravity into a pancake (Scientific American).*

—**viscoelasticity**, *n.* the quality or condition of being viscoelastic: *All substances show a combination of elastic and fluid behavior that is termed viscoelasticity (Arthur V. Tobolsky).*

viscosity (vis kos'ə tē), *n. Physics.* a property of fluids that causes them to resist flowing as a result of internal friction from the fluid's molecules moving against each other. All fluids have some degree of viscosity. *Helium II must be extraordinary fluid; in the terms of physics, it must have an extremely low viscosity, meaning an extremely small internal frictional resistance to flow. The viscosity of a liquid is usually measured by letting it flow through a narrow capillary tube (Eugene M. Lifshitz).* [from Late Latin *viscosus* viscous]

viscous (vis'kəs), *adj. Physics.* having or marked by viscosity: *A liquid which resists flowing, or resists the action of any other deforming force upon it, is said to be viscous (Jones, Inorganic Chemistry).* [from Late Latin *viscosus*, from *viscum* birdlime]

viscus (vis'kəs), *n.* singular of **viscera. Anatomy.** any visceral organ, especially one within the abdominal cavity: *Imperfection of any viscus, as lungs, heart or liver ... (Herbert Spencer).*

visible light, Physics. light consisting of electromagnetic waves that can be seen, as contrasted with ultraviolet and infrared waves that are invisible. Visible light ranges in wave-length from about 380 to about 710 nanometers. *Visible light occupies less than one octave of the spectrum of electromagnetic waves (W. C. Vaughan).* See the picture at **electromagnetic spectrum**.

visible spectrum, Physics. the part of the spectrum that can be seen, appearing as a band of colors merging through continuous hues into each other from red to violet: *... hence the only interstellar absorption lines of appreciable strength in the visible spectrum are produced by the relatively scarce elements, sodium and calcium (Lyman Spitzer, Jr.).*

visual binary or **visual double, Astronomy.** a binary or double star that can be seen as two stars with a telescope and sometimes with the unaided eye: *Most double stars appear as one to the unaided eye. If they can be seen as two stars, or if a telescope reveals them as two stars, they are called visual doubles or visual binaries (Charles A. Federer, Jr.).*

visual field, = field of vision.

visual purple, Biochemistry. a photosensitive, purplish-red protein present in the rods of the retina, that, in the presence of light, is bleached to form visual yellow: *If it takes a long time for the visual purple to form, the individual cannot see well in dim light. This condition is known as night blindness (Matthew Luc-kiesh).* Also called **rhodopsin**.

electrolyte

through the solution: *At the electrodes some type of chemical reaction takes place, resulting usually in deposition or solution of solid material or evolution of gas from decomposition of solvent or solute. These chemical changes are said to result from electrolysis of the solution* (Shortley and Williams, *Elements of Physics*). [from *electro-* + Greek *lysis* a dissolving]

electrolyte (i lek'trə lit), *n.* *Chemistry.* 1 a compound which ionizes when dissolved in a suitable liquid, or when melted, thus becoming a conductor for an electric current. Acids, bases, and salts are electrolytes. 2 a solution that will conduct an electric current: *Since its origin, the lead-acid battery has been constructed of two sets of plates, one lead, the other lead peroxide, submerged in a sulphuric acid solution called electrolyte* (Wall Street Journal).

[from *electro-* + Greek *lytos* soluble, from *lyein* to loose]

—**electrolytic** (i lek'trə lit'ik), *adj.* of or having to do with electrolysis or an electrolyte: *Water is the most common solvent in electrolytic solutions* (Physics Regents Syllabus).

—**electrolytically**, *adv.* by means of electrolysis.

electrolytic cell, *Chemistry.* 1 the container which holds the electrolyte and the electrodes for use in electrolysis. 2 the electrolyte, its container, and the electrodes used in electrolysis.

electrolyze (i lek'trə līz), *v.* *Chemistry.* to decompose by electrolysis: *Humphry Davy's best research was in electrochemistry. He had a battery built with 250 plates, which was the source of the strongest electric current known at the time. He first electrolyzed water in a gold dish and proved that the process gave hydrogen and oxygen and nothing else* (Ira D. Garard, *Invitation to Chemistry*).

electromagnet, *n.* *Physics.* a piece of soft iron that becomes a strong magnet temporarily when an electric current is passed through wire coiled around it: *A movable electromagnet, called the armature or rotor, spins because it is alternately attracted and repelled by fixed magnets, called the field magnets* (Tracy, *Modern Physical Science*).

electromagnetic, *adj.* *Physics.* 1 of or caused by an electromagnet. 2 of or having to do with electromagnetism.

—**electromagnetically**, *adv.* 1 by means of an electromagnet. 2 by electromagnetism.

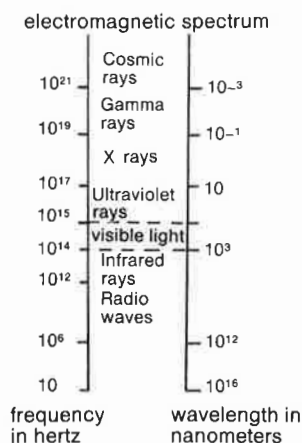
electromagnetic field, *Physics.* the field created by the interaction of an electric field and a magnetic field when an electric current passes through a wire.

electromagnetic induction, *Physics.* the production of an electromotive force in a circuit by variation of the magnetic field with which the circuit is connected.

electromagnetic radiation, *Physics.* a radiation of electromagnetic waves: *Electromagnetic radiations are generated by accelerating charged particles.*

electromagnetic spectrum, *Physics.* the entire range of the different types of electromagnetic waves, from the very long, low-frequency radio waves, through infrared and light waves to the very short, high-frequency cosmic rays and X rays: *By using uranium, they found it possible for the first time, to generate continuous*

and coherent light waves in the infrared portion of the electromagnetic spectrum (Science News).



electromagnetic unit, *Physics.* any of the units in the CGS system that are based on electromagnetism. They include the *abampere* (= 10 amperes), *abcoulomb* (= 10 coulombs), *abfarad* (= 10^9 farads), and *abhenry* (= 10^9 henrys). *Abbreviation:* e.m.u. or EMU

electromagnetic wave, *Physics.* a wave of energy generated by a varying electric and magnetic field when an electric charge oscillates or is accelerated. Electromagnetic waves are light waves, radio waves, X-rays, or gamma rays, according to their frequency and wavelengths. *Whenever an electric current changes in a circuit, energy in the form of electromagnetic waves is radiated away from the circuit* (E. Mallett).

electromagnetism, *n.* *Physics.* 1 magnetism produced by a current of electricity. 2 the branch of physics that deals with electricity and magnetism: *Electromagnetism, together with electrostatics and such subjects as electrochemistry ... made possible all the present applications of electricity except those depending on twentieth-century developments in electronics* (Shortley and Williams, *Elements of Physics*).

electromotive, *adj.* *Physics.* 1 producing a flow of electricity. 2 of or having to do with electromotive force.

electromotive force, *Physics.* 1 the force resulting from differences of potential that causes an electric current. *Symbol:* E

2 the amount of energy derived from an electric source per unit of current passing through the source. Electromotive force is commonly measured in volts. *If two different metals are placed in contact, and the junction is warmed, an electromotive force is generated* (F. P. Bowden). *Abbreviation:* e.m.f. or EMF

electromotive series, *Chemistry.* a list of the metallic elements in the decreasing order of their tendencies to change to ions in solution, so that each metal displaces from solution those below it in the list and is displaced by those above it.

electron (i lek'tron), *n.* *Physics.* an elementary particle having a very small mass at rest (9.095×10^{-28} gram) and a unit charge of negative electricity equal to 1.60219×10^{-19} coulombs. All atoms have electrons surrounding a nucleus at various distances in *orbitals* or *shells*. The hydrogen atom has one electron; the