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|---|---|---|
| T1<br>active site | T1<br>Active transport | T1<br>amylopectin |
| T1<br>amylose | T1<br>Anticoagulants | T1<br>anticodons |
| T1<br>Antihypertensives | T1<br>Atherosclerosis | T1<br>Atrial systole |

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|---|---|---|
| T1<br>A branched polymer of alpha-glucose that forms part of starch. | T1<br>The movement of substances across a cell membrane against their concentration gradient using energy and carrier proteins. | T1<br>The region of an enzyme where the substrate binds and reacts. |
| T1<br>A sequence of three nucleotides in tRNA that pairs with a complementary codon in mRNA. | T1<br>Substances that reduce or prevent blood clotting. | T1<br>An unbranched polymer of alpha-glucose that forms part of starch and coils into a helix. |
| T1<br>Contraction of the atria, pushing blood into the ventricles. | T1<br>The development of fatty deposits in artery walls, which can narrow the lumen and reduce blood flow. | T1<br>Medicines used to lower high blood pressure. |

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|---|---|---|
| T1<br>Blood pressure | T1<br>Bohr effect | T1<br>Competitive inhibitors |
| T1<br>Condensation | T1<br>confounders | T1<br>cooperative binding |
| T1<br>Correlation is not causation. | T1<br>degenerate | T1<br>deletion |

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|---|---|---|
| T1<br>A molecule that blocks the active site by competing with the substrate; more substrate can overcome it. | T1<br>The reduced affinity of haemoglobin for oxygen at higher carbon dioxide concentration and lower pH, promoting oxygen unloading. | T1<br>The force per unit area exerted by blood on the walls of blood vessels. |
| T1<br>Binding that changes a protein's affinity for further molecules, as when oxygen binding increases haemoglobin's affinity for additional oxygen. | T1<br>Variables associated with both an investigated factor and an outcome that can distort their apparent relationship. | T1<br>A chemical reaction in which molecules join and a small molecule, commonly water, is eliminated. |
| T1<br>A mutation in which one or more nucleotides are lost from a DNA sequence. | T1<br>Describing the genetic code because more than one codon can specify the same amino acid. | T1<br>An observed association between variables does not by itself show that changing one causes a change in the other. |

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| T1<br>Diastole | T1<br>Diffusion | T1<br>dipole |
| T1<br>DNA polymerase | T1<br>endothelium | T1<br>enzyme |
| T1<br>ester bonds | T1<br>Facilitated diffusion | T1<br>fibrin |

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|---|---|---|
| T1<br>A pair or separation of opposite electric charges, producing a positive and a negative end. | T1<br>Net movement down a concentration gradient, no ATP. | T1<br>The relaxation phase of a heart chamber's cycle, during which it can fill with blood. |
| T1<br>A biological catalyst that increases the rate of a reaction without being used up overall. | T1<br>The thin layer of cells lining the inside of blood vessels. | T1<br>An enzyme that synthesises DNA by adding nucleotides to a growing strand using a template. |
| T1<br>The insoluble protein mesh that traps cells to form a blood clot. | T1<br>Passive movement down a concentration or electrochemical gradient through a membrane channel or carrier protein. | T1<br>A covalent linkage formed between a carboxyl-derived group and an oxygen attached to a carbon group, as in fats. |

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| T1<br>fibrinogen | T1<br>fluid mosaic model | T1<br>frameshift |
| T1<br>Genetic screening | T1<br>glycogen | T1<br>glycosidic bond |
| T1<br>hydrogen bonds | T1<br>Hydrolysis | T1<br>induced-fit |

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|---|---|---|
| T1<br><br>A change in how codons are grouped after insertion or deletion of a nucleotide number that is not a multiple of three in a coding sequence. | T1<br><br>The model of the cell membrane as a fluid phospholipid bilayer with proteins scattered through it like tiles. | T1<br><br>The soluble blood protein converted to fibrin during clotting. |
| T1<br><br>A covalent linkage joining a sugar to another group, including the links between sugar units in carbohydrates. | T1<br><br>A highly branched glucose polysaccharide used for energy storage in animals and fungi. | T1<br><br>Testing for genetic variants or chromosome changes that may indicate a condition, carrier status or increased risk. |
| T1<br><br>A model in which substrate binding changes an enzyme's active-site shape to favour the reaction. | T1<br><br>Breaking chemical bonds by reaction with water. | T1<br><br>An attraction between a hydrogen atom bonded to an electronegative atom and a suitable electronegative atom with a lone pair. |

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| T1<br>insertion | T1<br>mass transport | T1<br>mononucleotide |
| T1<br>mRNA | T1<br>Mutations | T1<br>non-competitive inhibitors |
| T1<br>non-overlapping | T1<br>Osmosis | T1<br>peptide bond |

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| T1<br>A pentose (deoxyribose or ribose), a phosphate and a nitrogenous base. | T1<br>Bulk movement of substances over distances, as in blood circulation or transport through plant vessels. | T1<br>A mutation in which one or more nucleotides are added to a DNA sequence. |
| T1<br>A molecule that binds away from the active site and changes its shape; extra substrate cannot overcome it. | T1<br>A change in genetic material, such as a DNA sequence or chromosome structure. | T1<br>Messenger RNA: an RNA copy carrying genetic information from DNA to ribosomes for protein synthesis. |
| T1<br>A covalent bond joining amino acids, formed between an amino group and a carboxyl group with water removed. | T1<br>Water moving from higher to lower water potential across a partially permeable membrane. Endocytosis and exocytosis move bulk material in vesicles. | T1<br>Describing a genetic code in which each nucleotide belongs to only one codon in a reading frame. |

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| T1<br>phosphodiester bonds | T1<br>plaque | T1<br>polar solvent |
| T1<br>primary structure | T1<br>prothrombin | T1<br>quaternary |
| T1<br>ribosome | T1<br>risk factors | T1<br>Saturated |

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| T1<br>A solvent whose molecules have an uneven charge distribution, allowing interactions with ions and other polar substances. | T1<br>A fatty deposit within an artery wall that may narrow its lumen and contribute to cardiovascular disease. | T1<br>A covalent linkage through a phosphate group joining adjacent sugars in a nucleic-acid strand. |
| T1<br>The level of protein structure describing how two or more polypeptide subunits associate. | T1<br>An inactive plasma protein converted into thrombin during blood clotting. | T1<br>The sequence of amino acids in a protein chain. |
| T1<br>Describing a fatty acid with no carbon–carbon double bonds. | T1<br>A characteristic, exposure or behaviour associated with a higher chance of disease; a risk factor is not a guarantee that disease will occur. | T1<br>A cellular structure that joins amino acids into a polypeptide using information from messenger RNA. |

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| T1<br>secondary | T1<br>semi-conservative | T1<br>Statins |
| T1<br>substitution | T1<br>tertiary | T1<br>thrombin |
| T1<br>thromboplastin | T1<br>triglyceride | T1<br>triplet |

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| T1<br><br>Medicines that inhibit an enzyme involved in cholesterol synthesis and can lower blood LDL cholesterol. | T1<br><br>Describing DNA replication in which each resulting double-stranded molecule contains one original strand and one newly synthesised strand. | T1<br><br>Local folding of a polypeptide into structures such as alpha-helices and beta-sheets, stabilised by hydrogen bonds. |
| T1<br><br>An enzyme that converts soluble fibrinogen into insoluble fibrin during clotting. | T1<br><br>The overall three-dimensional folding of one polypeptide chain, maintained by interactions between its side chains. | T1<br><br>A mutation in which one nucleotide or base pair is replaced by another. |
| T1<br><br>A sequence of three DNA nucleotides that corresponds to one codon in the genetic code. | T1<br><br>A lipid formed from glycerol joined to three fatty acids by ester bonds. | T1<br><br>A term used for tissue-factor-containing material that helps initiate the blood-clotting cascade. |

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| T1<br>tRNA | T1<br>Unsaturated | T1<br>Ventricular systole |
| T1<br>water potential | T2<br>acrosome | T2<br>aseptic technique |
| T2<br>blastocyst | T2<br>calcium | T2<br>capsule |

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| T1<br><br>Contraction of the ventricles, raising pressure and ejecting blood into the arteries. | T1<br><br>Containing one or more carbon-carbon double or triple bonds rather than only single bonds. | T1<br><br>Transfer RNA: an RNA molecule that carries a particular amino acid to a ribosome and pairs its anticodon with an mRNA codon. |
| T2<br><br>Procedures that reduce contamination by unwanted microorganisms during handling and culture. | T2<br><br>The cap on a sperm head containing enzymes that digest a path into the egg. | T1<br><br>A measure of the tendency of water to move, determined by its free energy relative to pure water under specified conditions. |
| T2<br><br>A protective layer outside the cell wall of some bacteria that can aid attachment and reduce attack by host defences. | T2<br><br>Calcium ions: mineral ions needed for processes including signalling, muscle contraction and blood clotting. | T2<br><br>An early mammalian embryo with a fluid-filled cavity, an outer cell layer and an inner cell mass. |

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| T2<br>cell wall | T2<br>corridors | T2<br>cortical reaction |
| T2<br>Crossing over | T2<br>cytokinesis | T2<br>differential gene expression |
| T2<br>diploid | T2<br>double fertilisation | T2<br>egg |

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| T2<br>The release of cortical granule contents after sperm fusion, changing the egg's outer layers to help prevent entry of additional sperm. | T2<br>Habitat links that allow organisms to move between otherwise separated habitat areas. | T2<br>A supportive layer outside the cell membrane in plants, fungi and many microorganisms. |
| T2<br>The use of different sets or levels of gene products in different cells or conditions. | T2<br>The division of a cell's cytoplasm to form separate daughter cells. | T2<br>In prophase I, non-sister chromatids of a homologous pair swap sections, mixing alleles within chromosome pairs. |
| T2<br>A female gamete that can fuse with a male gamete during fertilisation. | T2<br>In flowering plants, fusion of one sperm nucleus with the egg and another with the polar nuclei, producing a zygote and endosperm. | T2<br>Having two complete sets of chromosomes in a cell nucleus. |

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| T2<br>endemic | T2<br>eukaryotic | T2<br>flagellum |
| T2<br>haploid | T2<br>Hardy–Weinberg equation | T2<br>heterozygosity index |
| T2<br>Independent assortment | T2<br>Index of diversity | T2<br>magnesium |

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| T2<br><br>A long, whip-like cell appendage involved in movement, such as the tail of a sperm cell. | T2<br><br>Describing cells with a membrane-bound nucleus and other membrane-bound organelles. | T2<br><br>Describing a species naturally restricted to a particular geographical area. |
| T2<br><br>A measure of genetic diversity expressing the chance that two sampled alleles at a locus differ. | T2<br><br>The relation $p^2 + 2pq + q^2 = 1$ for genotype frequencies under Hardy–Weinberg conditions, with $p + q = 1$ for two alleles. | T2<br><br>Having one complete set of chromosomes in a cell nucleus. |
| T2<br><br>Magnesium ions: mineral ions required in chlorophyll and as cofactors for many enzymes. | T2<br><br>A numerical measure combining information about species richness and the distribution of individuals among species. | T2<br><br>Each homologous pair lines up and separates at random in meiosis I. |

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| T2<br>Magnification | T2<br>Meiosis | T2<br>microfibrils |
| T2<br>Mitosis | T2<br>mitotic index | T2<br>niche |
| T2<br>nitrate | T2<br>organ systems | T2<br>organs |

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| T2<br>Fine bundles of cellulose chains that provide strength to plant cell walls. | T2<br>A type of nuclear division that produces haploid nuclei with half the original chromosome number and creates genetic variation. | T2<br>The ratio of an image's size to the corresponding actual size of the object. |
| T2<br>The role of a species in an ecosystem, including its resource use and interactions with environmental conditions and other organisms. | T2<br>The proportion of observed cells undergoing mitosis. | T2<br>Nuclear division that produces two genetically identical nuclei with the same chromosome number as the original nucleus. |
| T2<br>Several tissues working together at one function, such as the heart or a leaf. | T2<br>Groups of organs working together, such as the digestive system. | T2<br>A compound containing the nitrate ion, $NO_3$ with a single negative charge. |

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| T2<br>Phloem | T2<br>plasmodesmata | T2<br>pluripotent |
| T2<br>polygenic | T2<br>post-transcriptional modification | T2<br>prokaryotic |
| T2<br>resolution | T2<br>seed banks | T2<br>Species richness |

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| T2<br>Able to develop into the cell types of the body, but not by itself into a complete organism with its extraembryonic tissues. | T2<br>Channels through plant cell walls that connect the cytoplasm of neighbouring cells. | T2<br>The plant tissue carrying dissolved food from source to sink. |
| T2<br>Describing cells that lack a membrane-bound nucleus and other membrane-bound organelles. | T2<br>Processing of RNA after transcription, such as splicing, capping and addition of a poly-A tail in eukaryotes. | T2<br>Describes a trait controlled by several genes together, such as height. |
| T2<br>How many species. | T2<br>A stored collection of seeds for conservation or a reserve of viable seeds naturally present in soil. | T2<br>The ability to distinguish fine detail or closely separated features. |

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| T2<br>sperm | T2<br>three-domain system | T2<br>tissues |
| T2<br>totipotent | T2<br>turbidity | T2<br>Xylem |
| T2<br>zona pellucida | T3<br>absolute uncertainty | T3<br>anomalous result |

| | | |
|---|---|---|
| T2<br><br>A group of cells organised to carry out a particular function. | T2<br><br>Classification of cellular life into Bacteria, Archaea and Eukarya. | T2<br><br>Male reproductive cells that can fuse with egg cells during fertilisation. |
| T2<br><br>The plant tissue carrying water and minerals up from the roots. | T2<br><br>Cloudiness caused by suspended material; in a microbial culture it can provide an indirect estimate of cell concentration. | T2<br><br>Able to produce all cell types, including extraembryonic tissues, needed to develop a complete organism. |
| T3<br><br>A reading inconsistent with the others – a point far from the line – checked by repeating that treatment, not silently deleted. | T3<br><br>The estimated uncertainty in a measurement expressed in the same units as the measurement. | T2<br><br>The glycoprotein layer around a mammalian egg that participates in sperm recognition and changes after fertilisation. |

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| T3<br>bar chart | T3<br>colorimeter | T3<br>control treatment |
| T3<br>control variable | T3<br>dependent variable | T3<br>error bars |
| T3<br>gradient | T3<br>graticule | T3<br>hypothesis |

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| T3<br>A whole treatment left unchanged (solvent with no trifluralin; water instead of methanol) so that any difference can be attributed to the independent variable alone. | T3<br>An instrument that measures light absorption or transmission through a sample at a selected wavelength. | T3<br>A graph using separated bars to represent values or frequencies for categories. |
| T3<br>Lines on a graph indicating a stated measure of variation or uncertainty around a plotted value. | T3<br>The measured or calculated outcome whose response to changes in another variable is studied. | T3<br>A factor kept constant or otherwise accounted for so its effect does not distort an investigation. |
| T3<br>A proposed explanation or prediction that can be tested using evidence. | T3<br>A scale in a microscope eyepiece that must be calibrated against a known scale before measuring specimens. | T3<br>The spatial rate and direction of change of a quantity; for a scalar field its gradient points towards the steepest increase. |

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| T3<br>independent variable | T3<br>line graph | T3<br>mitotic index |
| T3<br>Percentage uncertainty | T3<br>semi-quantitative | T3<br>Significant figures |
| T3<br>standard deviation | T3<br>systematic error | T3<br>uncertainties |

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|---|---|---|
| T3<br>The proportion of observed cells undergoing mitosis. | T3<br>A graph using plotted points, often joined by lines, to show how one variable changes with another. | T3<br>An input or factor whose value is chosen or varied to examine its effect on another quantity. |
| T3<br>The meaningful digits in a measured or rounded number, beginning with its first non-zero digit. | T3<br>Providing approximate amounts, ranges or comparisons rather than precise numerical measurements. | T3<br>The absolute uncertainty divided by the measured value, multiplied by one hundred. |
| T3<br>Estimated limits or measures of doubt associated with measured or calculated values. | T3<br>A consistent measurement bias caused by the method or instrument. | T3<br>A measure of spread equal to the square root of the variance. |

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|---|---|---|
| T4<br>thylakoid | T4<br>light-dependent reactions | T4<br>photophosphorylate |
| T4<br>stroma | T4<br>light-independent reactions | T4<br>photosystem II |
| T4<br>photosystem I | T4<br>ATP synthase | T4<br>photolysis |

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| T4<br><br>To form ATP from ADP and inorganic phosphate using energy captured from light during photosynthesis. | T4<br><br>Photosynthetic reactions that use light energy to form ATP and reduced NADP, with oxygen released from water. | T4<br><br>A flattened membrane compartment in a chloroplast whose membrane carries the light-dependent photosynthetic reactions. |
| T4<br><br>The first photosystem in the light-dependent reaction; it splits water and passes electrons on. | T4<br><br>Carbon-fixation reactions of photosynthesis that use ATP and reduced NADP to produce organic molecules; they do not directly absorb light. | T4<br><br>The fluid region inside a chloroplast surrounding its thylakoids, where the Calvin cycle takes place. |
| T4<br><br>Chemical breakdown caused by light; in photosynthesis, water is split to provide electrons, hydrogen ions and oxygen. | T4<br><br>An enzyme complex that uses the movement of protons down their electrochemical gradient to synthesise ATP. | T4<br><br>The photosystem that re-excites electrons to reduce NADP. |

| | | |
|---|---|---|
| T4<br>electron carriers | T4<br>chemiosmosis | T4<br>cyclic photophosphorylation |
| T4<br>carbon fixation | T4<br>rubisco | T4<br>absorption spectrum |
| T4<br>action spectrum | T4<br>Limiting factors | T4<br>Gross primary productivity |

| | | |
|---|---|---|
| T4<br><br>ATP production in which electrons from photosystem I cycle back, making no reduced NADP. | T4<br><br>The movement of ions, commonly protons, down an electrochemical gradient across a membrane to drive a process such as ATP synthesis. | T4<br><br>Proteins in the thylakoid membrane that pass electrons along and pump protons. |
| T4<br><br>The pattern of wavelengths absorbed by a substance, often seen as missing bands or lines in transmitted light. | T4<br><br>The enzyme that catalyses carbon fixation in the Calvin cycle. | T4<br><br>Rubisco joining $CO_2$ to RuBP in the Calvin cycle. |
| T4<br><br>The total rate at which producers capture energy or fix carbon before their respiratory losses are subtracted. | T4<br><br>A factor whose availability restricts the rate or extent of a process. | T4<br><br>A graph showing how the effectiveness of a process varies with the wavelength of light. |

| | | |
|---|---|---|
| T4<br>net primary productivity | T4<br>habitat | T4<br>population |
| T4<br>community | T4<br>ecosystem | T4<br>niche |
| T4<br>Succession | T4<br>climax community | T4<br>dendrochronology |

| | | |
|---|---|---|
| T4<br><br>All the organisms of one species living in a particular area at a particular time. | T4<br><br>The place where an organism lives. | T4<br><br>The rate of energy storage or biomass production by producers after subtracting their respiratory losses from gross primary productivity. |
| T4<br><br>The role of a species in an ecosystem, including its resource use and interactions with environmental conditions and other organisms. | T4<br><br>A community of organisms interacting with each other and with their physical environment. | T4<br><br>All the populations of different species living and interacting in an area. |
| T4<br><br>The study of tree-ring patterns to date wood and infer past environmental conditions. | T4<br><br>In a classical succession model, a relatively stable mature community expected under the prevailing conditions; disturbance can alter or replace it. | T4<br><br>A directional change in the composition of an ecological community over time. |

| | | |
|---|---|---|
| T4<br>enhanced greenhouse effect | T4<br>global warming potential | T4<br>allele frequency |
| T4<br>directional selection | T4<br>stabilising selection | T4<br>Speciation |
| T4<br>allopatric | T4<br>sympatric | T4<br>turbidity |

| | | |
|---|---|---|
| T4<br><br>How common a particular allele is among all copies of that gene in a population. | T4<br><br>A measure comparing the warming effect of an emitted greenhouse gas with that of carbon dioxide over a specified time horizon. | T4<br><br>Additional warming caused by increased greenhouse-gas concentrations strengthening the atmosphere's retention of outgoing infrared radiation. |
| T4<br><br>The formation of new species when populations diverge until they can no longer interbreed. | T4<br><br>Selection favouring average individuals and removing extremes, keeping a trait stable. | T4<br><br>Selection favouring one extreme of a trait, shifting the population in that direction. |
| T4<br><br>Cloudiness caused by suspended material; in a microbial culture it can provide an indirect estimate of cell concentration. | T4<br><br>Describing speciation without geographical separation, following the development of reproductive isolation. | T4<br><br>Describing speciation in populations separated geographically, which reduces or prevents gene flow. |

| | | |
|---|---|---|
| T4<br>dilution plating | T4<br>lag | T4<br>log |
| T4<br>stationary | T4<br>death | T4<br>capsid |
| T4<br>Mycobacterium tuberculosis | T4<br>HIV | T4<br>antigens |

| | | |
|---|---|---|
| T4<br><br>The exponential phase of microbial growth, when cells divide at an approximately constant rate under suitable conditions. | T4<br><br>The phase after microorganisms enter a new culture medium when they adapt before rapid population growth. | T4<br><br>Diluting a microbial sample and culturing measured volumes on agar to estimate viable cell concentration from colony counts. |
| T4<br><br>The protein coat surrounding a virus's genetic material. | T4<br><br>The phase of a microbial culture in which cells die faster than new cells are produced, so the viable population declines. | T4<br><br>The phase of a microbial culture when production of new cells is approximately balanced by cell death. |
| T4<br><br>A molecule or molecular feature recognised by the immune system that can trigger a specific immune response. | T4<br><br>Human immunodeficiency virus: a virus that attacks immune cells, particularly helper T cells, and can cause AIDS. | T4<br><br>The bacterium that causes tuberculosis. |

| | | |
|---|---|---|
| T4<br>Humoral | T4<br>antibodies | T4<br>B memory cells |
| T4<br>Cellular | T4<br>T killer cells | T4<br>variable region |
| T4<br>active | T4<br>passive | T4<br>herd immunity |

| | | |
|---|---|---|
| T4<br>Long-lived B lymphocytes formed after an immune response that enable a faster response to the same antigen. | T4<br>Proteins made by immune cells that bind to specific antigens. | T4<br>B effector cells → plasma cells → antibodies. |
| T4<br>The part of an antibody whose amino-acid sequence differs among antibodies and helps determine antigen-binding specificity. | T4<br>Cytotoxic T lymphocytes that recognise and kill infected or abnormal body cells. | T4<br>T helper cells coordinate, T killer cells T destroy infected cells, T memory cells persist. |
| T4<br>Indirect protection arising when population immunity reduces transmission and makes infection of susceptible individuals less likely. | T4<br>Describing immunity acquired by receiving ready-made antibodies, rather than producing them through one's own immune response. | T4<br>Describing immunity produced by a person's own immune response, as after infection or vaccination. |

| | | |
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| T4<br>Bacteriostatic | T4<br>bactericidal | T4<br>polymerase chain reaction |
| T4<br>Gel electrophoresis | T4<br>profile | T4<br>rigor mortis |
| T5<br>actin | T5<br>ADH | T5<br>Adrenaline |

| | | |
|---|---|---|
| T4<br><br>A method that repeatedly copies a chosen DNA region using primers, a DNA polymerase and cycles of temperature change. | T4<br><br>Able to kill bacteria. | T4<br><br>Able to inhibit bacterial growth and reproduction without necessarily killing the cells. |
| T4<br><br>Stiffening of muscles after death as ATP becomes unavailable to release actin–myosin cross-bridges. | T4<br><br>The pattern of separated bands produced by electrophoresis, used to compare biological samples. | T4<br><br>A technique that separates charged molecules through a gel using an electric field. |
| T5<br><br>A hormone released by the adrenal medulla that prepares the body for rapid action during stress or excitement. | T5<br><br>Antidiuretic hormone: it increases water reabsorption in the kidney when blood is too concentrated. | T5<br><br>A protein forming thin filaments in muscle fibres and participating with myosin in contraction. |

| | | |
|---|---|---|
| T5<br>all-or-nothing | T5<br>Auxin | T5<br>Bioinformatics |
| T5<br>Bowman's capsule | T5<br>cerebellum | T5<br>cerebral hemispheres |
| T5<br>collecting duct | T5<br>deaminated | T5<br>dopamine |

| | | |
|---|---|---|
| T5<br><br>The use of computing to store, analyse and compare biological data such as DNA sequences. | T5<br><br>A class of plant hormones involved in growth responses, including cell elongation and tropisms. | T5<br><br>The principle that a single action potential is triggered when threshold is reached and has a characteristic amplitude rather than a graded size. |
| T5<br><br>The two large halves of the cerebrum, involved in functions including perception, voluntary movement, learning and memory. | T5<br><br>A region of the brain involved in coordinating movement, balance and motor learning. | T5<br><br>The cup-shaped structure around a kidney glomerulus that receives the filtrate formed by ultrafiltration. |
| T5<br><br>A chemical messenger linked with reward, movement, and attention. | T5<br><br>Having had an amino group removed, as when excess amino acids are processed in the liver. | T5<br><br>A kidney tube receiving fluid from several nephrons, where further water and ion regulation helps determine urine composition. |

| | | |
|---|---|---|
| T5<br>Epigenetics | T5<br>gibberellins | T5<br>Glycolysis |
| T5<br>Habituation | T5<br>Homeostasis | T5<br>hypothalamus |
| T5<br>insulin | T5<br>Krebs cycle | T5<br>lactate |

| | | |
|---|---|---|
| T5<br>The first stage of respiration, splitting glucose into two pyruvate in the cytoplasm. | T5<br>A plant hormone involved in processes such as stem elongation, seed germination and growth. | T5<br>The study of changes in gene activity associated with mechanisms such as DNA methylation or chromatin modification without changing the DNA base sequence. |
| T5<br>A brain region that helps regulate homeostasis and links nervous control with hormonal signalling. | T5<br>Maintaining a relatively stable internal environment despite external or internal changes. | T5<br>A decreasing response to a repeated harmless stimulus. |
| T5<br>The ion formed from lactic acid, produced when pyruvate is reduced in lactate fermentation. | T5<br>A cycle of enzyme-controlled reactions that oxidises acetyl groups, releasing carbon dioxide and producing reduced coenzymes and a small amount of ATP or its equivalent. | T5<br>A hormone produced by pancreatic beta cells that helps lower blood glucose concentration. |

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| T5<br>ligament | T5<br>ligase | T5<br>Link reaction |
| T5<br>loop of Henle | T5<br>medulla oblongata | T5<br>methylation |
| T5<br>Microarrays | T5<br>minute ventilation | T5<br>myelinated |

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| T5<br>The conversion of pyruvate to acetyl-CoA, releasing carbon dioxide and reducing NAD before the Krebs cycle. | T5<br>An enzyme that joins molecules by forming a new chemical bond, as in joining DNA fragments. | T5<br>A strong band of connective tissue joining bone to bone at a joint. |
| T5<br>Addition of methyl groups; DNA methylation can affect gene expression. | T5<br>A brainstem region involved in control of functions including breathing and heart rate. | T5<br>The hairpin-shaped section of a nephron that helps establish the kidney's medullary concentration gradient. |
| T5<br>Having an insulating myelin sheath around an axon, enabling faster saltatory conduction. | T5<br>The volume of air moved into or out of the lungs per minute, calculated from tidal volume and breathing frequency. | T5<br>A surface carrying many known molecular probes used to test numerous sample targets in parallel. |

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| T5<br>myofibrils | T5<br>myogenic | T5<br>myosin |
| T5<br>Negative feedback | T5<br>nephron | T5<br>nociceptors |
| T5<br>Oxidative phosphorylation | T5<br>oxygen debt | T5<br>Phytochrome |

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| T5<br>A motor protein whose heads bind actin and use ATP during muscle contraction. | T5<br>Able to initiate contraction within the muscle tissue itself, as in cardiac muscle. | T5<br>Contractile structures within muscle fibres, made of repeating sarcomeres containing actin and myosin filaments. |
| T5<br>Sensory receptors that respond to potentially damaging stimuli and contribute to the sensation of pain. | T5<br>A microscopic kidney unit that filters blood plasma and modifies the resulting fluid through reabsorption and secretion. | T5<br>A control process in which a change triggers responses that oppose that change. |
| T5<br>A plant pigment system that detects red and far-red light and helps regulate developmental responses. | T5<br>The extra oxygen needed after exercise to break down accumulated lactic acid. | T5<br>ATP formation linked to electron transport and chemiosmosis, with oxygen as the final electron acceptor in aerobic respiration. |

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| T5<br>pituitary | T5<br>plasmid | T5<br>positive feedback |
| T5<br>proximal convoluted tubule | T5<br>Recombinant DNA | T5<br>reflex arc |
| T5<br>refractory period | T5<br>Respiratory quotient | T5<br>restriction enzyme |

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| T5<br>A response that AMPLIFIES the original change, as in childbirth contractions. | T5<br>A usually circular DNA molecule that replicates separately from a cell's main chromosome; engineered plasmids can carry inserted genes as vectors. | T5<br>An endocrine gland at the base of the brain that releases hormones regulating several other glands and body processes. |
| T5<br>The neural pathway connecting a receptor to an effector in a reflex response. | T5<br>DNA made by joining genetic material from different sources. | T5<br>The first twisted section of a kidney tubule, where useful substances such as glucose are reabsorbed. |
| T5<br>An enzyme cutting DNA at a specific base sequence. | T5<br>The ratio of carbon dioxide produced to oxygen consumed during respiration, measured in comparable amounts over the same period. | T5<br>The interval after an action potential when another action potential is impossible or requires a stronger stimulus. |

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| T5<br>saltatory conduction | T5<br>sino-atrial node | T5<br>sodium-potassium pump |
| T5<br>sticky ends | T5<br>synapse | T5<br>tendon |
| T5<br>threshold | T5<br>transcription factor | T5<br>urea |

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| T5<br><br>A membrane protein that uses ATP to move sodium ions out of a cell and potassium ions into it, maintaining their gradients. | T5<br><br>The group of cells in the right atrium that normally initiates the heart's electrical rhythm. | T5<br><br>Transmission of an action potential along a myelinated axon by regeneration at successive nodes of Ranvier. |
| T5<br><br>A tough cord of collagen-rich tissue joining muscle to bone. | T5<br><br>A junction through which a neuron communicates with another cell, usually using a chemical transmitter. | T5<br><br>Short single-stranded DNA overhangs that can pair with complementary overhangs. |
| T5<br><br>A nitrogen-containing compound formed from excess amino groups in mammals and excreted mainly in urine. | T5<br><br>A protein that binds specific DNA sequences or interacts with transcription machinery to regulate gene expression. | T5<br><br>A boundary value at which a specified effect begins or a decision changes. |

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| T6<br>investigation | T6<br>hypothesis | T6<br>respirometers |
| T6<br>spirometers | T6<br>quadrats | T6<br>transects |
| T6<br>abiotic | T6<br>abundance | T6<br>turbidity |

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| T6<br>Apparatus that measures the rate of oxygen uptake by organisms. | T6<br>A proposed explanation or prediction that can be tested using evidence. | T6<br>A practical experiment to answer a question. |
| T6<br>Lines across a habitat along which samples are taken. | T6<br>Square frames used to sample organisms in an area. | T6<br>Apparatus that measures breathing volumes. |
| T6<br>Cloudiness caused by suspended material; in a microbial culture it can provide an indirect estimate of cell concentration. | T6<br>The amount or relative frequency of a particular entity, such as a species or an isotope. | T6<br>Non-living factors of an environment, such as temperature or pH. |

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| T6<br>Aseptic | T6<br>Zones of inhibition | T6<br>redox indicator |
| T6<br>tidal volume | T6<br>minute ventilation | T6<br>Ethics |
| T6<br>informed consent | T6<br>dependent variable | T6<br>t-test |

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| T6<br>A substance that changes colour according to its oxidation state, allowing oxidation–reduction changes to be followed. | T6<br>Clear areas around an antibiotic disc where bacteria cannot grow. | T6<br>Of technique: preventing contamination by microorganisms. |
| T6<br>Principles used to judge whether decisions and behaviour are responsible, fair or morally acceptable. | T6<br>The volume of air moved into or out of the lungs per minute, calculated from tidal volume and breathing frequency. | T6<br>The volume of air breathed in or out in a normal breath. |
| T6<br>A statistical test using a t-distribution to assess an appropriate hypothesis about means under stated assumptions. | T6<br>The measured or calculated outcome whose response to changes in another variable is studied. | T6<br>Voluntary agreement to participate after receiving and understanding information about what participation involves and its relevant risks. |

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| T6<br>correlation | T6<br>Limitations | T6<br>Random sampling |
| T6<br>coordinate | T6<br>magnification | T6<br>dilution plating |
| T6<br>serially dilute | T6<br>colonies | T6<br>contamination |

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| T6<br>Choosing sample points by chance to avoid bias. | T6<br>Weaknesses in a method that reduce confidence in the results. | T6<br>A statistical association between variables, which does not by itself establish causation. |
| T6<br>Diluting a microbial sample and culturing measured volumes on agar to estimate viable cell concentration from colony counts. | T6<br>The ratio of an image's size to the corresponding actual size of the object. | T6<br>A pair of numbers giving a position, used to place random quadrats. |
| T6<br>Unwanted microorganisms getting into a culture. | T6<br>Visible clusters of microorganisms grown from single cells. | T6<br>To dilute step by step, each by the same factor. |

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| T6<br>dilution factor | T6<br>error bars | T6<br>significant |
| T6<br>degrees of freedom | T6<br>critical value | T6<br>null hypothesis |
| T6<br>negative correlation | T6<br>line graph | T6<br>continuous |

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| T6<br>Unlikely to be due to chance. | T6<br>Lines on a graph indicating a stated measure of variation or uncertainty around a plotted value. | T6<br>How many times a sample has been diluted. |
| T6<br>The default claim about a population parameter that a statistical test assesses against an alternative. | T6<br>A boundary value separating a hypothesis test's rejection region from its non-rejection region. | T6<br>The number of independent values free to vary after relevant constraints have been imposed. |
| T6<br>Changing without a break or jump, or taking every value within an interval. | T6<br>A graph using plotted points, often joined by lines, to show how one variable changes with another. | T6<br>A relationship where one variable falls as the other rises. |

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|---|---|---|
| T6<br>axes | T6<br>scales | T6<br>anomalous |
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| T6<br><br>Of a result: not fitting the pattern of the others. | T6<br><br>The numbered divisions along a graph's axes. | T6<br><br>The horizontal and vertical reference lines of a graph. |
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