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Jim Al-Khalili: How quantum biology might explain life's biggest questions | TED Talk

https://www.ted.com/talks/jim_al_khalili_how_quantum_biology_might_explain_life_s_biggest_questions

All Words

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Session 1: Word List

introduction

n. a preliminary explanation or remarks given before the start of a text, performance, or event; the act of bringing something new into existence or introducing something to a wider audience or new market

synonym : initiation, preamble, prologue

(1) **introduction** education, (2) self- **introduction**

The **introduction** to the new class was informative and engaging.

emerging

adj. starting to exist, mature, or become well-known

synonym : arising, occurring, state-of-the-art

(1) **emerging** country, (2) **emerging** technologies

Emerging technologies have dramatically improved productivity in various industries.

speculate

v. to form a theory or conjecture or guess about a subject without solid evidence

synonym : assume, conjecture, infer

(1) **speculate** about the reason, (2) **speculate** on the outcome

He **speculated** that this investment would lead to success.

exciting

adj. causing a lot of interest or excitement

synonym : exhilarating, stimulating, thrilling

(1) **exciting** football player, (2) **exciting** news

The findings of the experiment were both **exciting** and unexpected.

quantum

n. the smallest amount or unit of something, especially (electromagnetic) energy

(1) probabilistic **quantum** theory, (2) laws of **quantum** mechanics

Big techs are now eager to develop **quantum** computers.

biology

n. the scientific study of life and the natural processes of living things

(1) evolutionary **biology**, (2) cell and molecular **biology**

In junior high school, we had to dissect a frog in **biology** class.

doe

n. a mature female of mammals of which the male is called a buck, such as a deer or a rabbit

synonym : rabbit, bunny, hare

(1) **doe** rabbit, (2) buck and **doe**

Hunters use a whistle that makes the **doe** sound to lure stags.

mechanics

n. the branch of physics that deals with the study of motion, forces, and energy; (mechanic) someone whose occupation is repairing and maintaining automobiles

synonym : kinematics, dynamics

(1) **mechanics** equation, (2) **mechanics** of the game

He studied **mechanics** in college and now works as an engineer.

weird

adj. extraordinary, unexpected, or difficult to explain

synonym : bizarre, creepy, peculiar

(1) a **weird** dress, (2) the state of being **weird**

My computer has been acting **weird** recently.

atomic

adj. of or relating to atom (= the smallest component of an element)

synonym: tiny, microscopic, nuclear

(1) **atomic** nucleus, (2) **atomic** bomb

Carbon has an **atomic** mass of 12.

atom

n. the smallest unit of ordinary matter that forms a chemical element, composed of a nucleus and one or more electrons bound to the nucleus

synonym: particle, element, fraction

(1) oxygen **atom**, (2) neutral hydrogen **atoms**

The outermost electron shell of an **atom** determines its chemical characteristics.

molecule

n. a group of two or more atoms held together by attractive forces known as chemical bonds

synonym: particle, element, atom

(1) small **molecules**, (2) **molecule** behavior

The shape of the DNA **molecule** is a double helix.

underpin

v. to support or strengthen the foundations of something

synonym: support, foundation, base

(1) **underpin** a structure, (2) **underpin** democratization

The research findings **underpin** the theory that human activities cause global warming.

modern

adj. of or belonging to the present time or recent times

synonym: contemporary, stylish, current

(1) **modern** poetry, (2) pre- **modern** agricultural society

Their headquarters are in a **modern** skyscraper.

physics

n. the science of matter and energy and their interactions

(1) nuclear **physics**, (2) laws of **physics**

He studied the **physics** of radiation.

chemistry

n. the branch of the natural sciences dealing with the composition of substances and their properties and reactions

(1) professor of **chemistry**, (2) the **chemistry** of soil

He is familiar with **chemistry** and biology.

process

n. a series of actions or operations performed to achieve a particular outcome or goal; a systematic procedure or approach used to accomplish a specific task or objective; a method of treating milk to make it suitable for consumption or use in other dairy products

synonym : procedure, method, system

(1) **process** improvement, (2) decision-making **process**

The **process** for applying for a visa can be lengthy and complicated.

mechanism

n. a part of a machine, or a set of parts that performs a task; a natural or established process that occurs during a specific situation or reaction

synonym : means, method, system

(1) the **mechanism** for DNA replication, (2) defense **mechanism**

He discovered unique **mechanisms** for photochemical reactions.

phenomenon

n. something that exists and can be perceptible, especially one that is not fully understood

synonym : marvel, wonder, splendor

(1) natural **phenomenon**, (2) historical **phenomenon**

A rainbow is a natural **phenomenon**.

experiment

n. the scientific test conducted to observe what happens and gain new knowledge

synonym : experimentation, investigation

(1) **experiment** design, (2) series of **experiments**

His **experiments** showed highly positive results.

biochemical

adj. relating to the chemical processes and substances that occur within living organisms

synonym : molecular, biological

(1) **biochemical** reaction, (2) complex **biochemical**

Biochemical research is essential to understanding the complex chemical reactions in living organisms.

lab

n. a workplace for the conduct of scientific research; a laboratory

synonym : workshop, laboratory, research chamber

(1) **lab** instrument, (2) medical **lab**

The Prime Minister will pay a courtesy visit to the Nobel laureate's **lab**.

spectroscope

n. an optical instrument used for spectrographic analysis (= measurement of properties of light over a specific portion of the electromagnetic spectrum)

(1) infrared **spectroscope**, (2) Fourier **spectroscope**

An X-ray **spectroscope** can determine the composition of the elements in a sample.

firm

adj. resolute or unwavering in decision-making or action; strong or secure in structure, make, or composition; reliable, trustworthy, or dependable; (noun) a business or company

synonym : stable, secure, steadfast

(1) **firm** grip, (2) accounting **firm**

The **firm** deadline for submitting the project is tomorrow, so we need to work efficiently to finish on time.

specific

adj. clearly defined or particular to a certain thing or situation; distinct, explicit, and precise

synonym : particular, definite, distinct

(1) **specific** instructions, (2) industry- **specific** regulations

The scientist conducted a study that provided **specific** details about the species' behavior.

physicist

n. a scientist who specializes in the field of physics

(1) talented **physicist**, (2) theoretical **physicist**

Einstein was an outstanding and famous **physicist** of the 20th century.

molecular

adj. of or relating to molecules (= a group of two or more atoms held together by attractive forces known as chemical bonds)

synonym : microscopic, atomic

(1) **molecular** structure, (2) **molecular** biology

Molecular weight is the sum of all the atoms.

interdisciplinary

adj. involving or combining several academic disciplines or fields of study

synonym : multidisciplinary, transdisciplinary

(1) **interdisciplinary** research, (2) an **interdisciplinary** conference

The **interdisciplinary** approach to solving the problem involved experts from multiple fields working together.

nuclear

adj. of or relating to or constituting the nucleus of an atom; deriving destructive energy from the release of atomic energy

synonym : atomic

(1) **nuclear** fusion, (2) use of **nuclear** power

Many countries have now agreed to a treaty banning the use of **nuclear** weapons.

astonished

adj. extremely surprised and upset

synonym : amazed, dumbfounded, flabbergasted

(1) **astonished** at the success, (2) cast **astonished** eyes

She was **astonished** by the news and could hardly believe it.

structure

n. the way of construction of something and the arrangement of its parts, or a complex thing constructed of many parts

synonym : construction, architecture, establishment

(1) the **structure** of a machine, (2) **structure** and function of the brain

The organizational **structure** of start-ups is often flat and straightforward.

universe

n. everything that exists, especially all physical matter, including planets, stars, galaxies, and all other forms of matter and energy

synonym: cosmos, macrocosm

(1) theory of the **universe**, (2) expansion of the **universe**

The **universe** is about 13.8 billion years old.

magnitude

n. the extent, level, importance, or amount of something

synonym: size, extent, level

(1) a star of the first **magnitude**, (2) the **magnitude** of the disaster

The **magnitude** of the earthquake was measured at 7.8 on the Richter scale.

needle

n. a thin, pointed object typically used for sewing or medical purposes; a metal or plastic instrument used for administering injections or drawing blood

synonym: thorn, spike, pin

(1) **needle** prick, (2) sewing **needle**

The acupuncturist inserted **needles** into specific points on my body to alleviate my pain.

bacteria

n. single-celled or noncellular spherical or spiral or rod-shaped organisms that exist in large numbers in the air, water, and soil, and also in living and dead creatures and plants, and are often a cause of disease

synonym: microorganism, microbe

(1) pathogenic **bacteria**, (2) harmless **bacteria**

Bacteria prevalent in hospitals are often resistant to antibiotics.

enzyme

n. a substance produced by a living organism that acts as a catalyst to bring about a specific biochemical reaction

synonym: catalyst, activator, accelerator

(1) **enzyme** reaction, (2) lack of digestive **enzymes**

A deficiency in the **enzyme** can lead to a medical condition.

eventually

adv. finally, particularly after a long time or a lot of struggle, complications, and so on

synonym: finally, someday, ultimately

(1) **eventually** become obsolete, (2) **eventually** succeed

The corporation **eventually** dominated the entire tobacco business.

nanoscale

adj. on a scale that can be measured in nanometres (= one billionth of a meter); on a very small scale

(1) **nanoscale** device, (2) things at the **nanoscale**

This process improves the strength of the metal by controlling the **nanoscale** lattice structure of the metal.

nucleus

n. the central and most important part of something; (biology) a part of the cell containing DNA and RNA and responsible for growth and reproduction; (physics) the very dense central region of an atom

synonym: core, heart, middle

(1) form a **nucleus**, (2) the **nucleus** of a team

DNA is stored in the **nucleus** of a cell.

dot

n. a very small circular mark, especially one that is printed

synonym: drop, dab, fleck

(1) connecting the **dots**, (2) **dot** blot method

The wallpaper had a pattern of pink **dots** on a white surface.

domain

n. a specific sphere of influence or control; a specific field of knowledge or expertise

synonym: territory, realm, sphere

(1) **domain** of use, (2) a dependent **domain**

The company's **domain** in the market was expanding to new

territories.

stick

v. to put something, usually a sharp object, into something; to restrict yourself to doing or using one certain thing and not change; (noun) a thin piece of wood or other material

synonym : pierce, adhere, stay

(1) **stick** a key in a lock, (2) fire **stick**

You **stick** a bill in the change machine, and the coins pop out.

bond

n. a close emotional connection between two or more people; a certificate of debt that a government or corporation issues to raise money

synonym : bind, adhesion, attachment

(1) **bond** as a family, (2) global **bond** market

They had formed a friendship **bond**.

physically

adv. in a way related to a person's body or appearance rather than their mind

(1) **physically** and mentally, (2) stay **physically** fit

Having a **physically** healthy physique is essential for a great life.

nowadays

adv. at the current time, in comparison to the past

synonym : currently, presently, today

(1) young people **nowadays**, (2) not to be seen **nowadays**

People can clone a sheep **nowadays**.

protein

n. a molecule made up of a long chain of amino acids, which is essential for the structure and function of the body's tissues

(1) stress **protein**, (2) **protein** synthesis

The body needs a certain amount of **protein** to build and repair tissues.

develop

v. to grow or expand; to improve or refine through a process of progress and refinement, often to achieve greater sophistication or complexity; to elaborate or add detail to something that is in the process of being created

synonym: evolve, progress, advance

(1) **develop** a strategy, (2) **develop** a skill

We must **develop** a new system to streamline our workflow and increase efficiency.

mathematics

n. the science dealing with the logic of quantities, shapes, spaces, and arrangement

synonym: arithmetic, calculation, calculus

(1) a good grounding in **mathematics**, (2) **mathematics** competition

He has a flair for **mathematics**.

trillion

n. the number 1,000,000,000,000; a million million

(1) **trillion** cubic feet, (2) many **trillions** of dollars

One light year is nearly 6 **trillion** miles.

probabilistic

adj. characterized by the influence of chance or probability; involving the use of statistical models or methods to estimate likelihoods or risks

synonym: probable, statistical, likely

(1) **probabilistic** model, (2) **probabilistic** approach

In a **probabilistic** system, the outcome is uncertain and can vary based on chance.

fuzzy

adj. having a soft and indistinct outline or covered with fine, soft, and hairlike fibers

synonym: hazy, blurry, indistinct

(1) **fuzzy** logic, (2) **fuzzy** memory

The picture was **fuzzy** because it was taken with an old camera.

phantom

n. a ghost or a spirit of a dead person; something existing only in your imagination or perception

synonym : ghost, spirit, apparition

(1) a **phantom** company, (2) **phantom** limb pain

The police frantically searched for clues to the **phantom** killer.

particle

n. a small piece of something; a word or piece of a term with grammatical function but little or no significance

synonym : atom, grain, bit

(1) charged **particle**, (2) **particle** energy

We can calculate the position of the **particles** statistically.

fundamental

adj. forming an essential base or core from which everything else develops or is affected

synonym : basic, essential, entire

(1) **fundamental** education, (2) **fundamental** rights

Human behavior has **fundamental** characteristics.

organic

adj. of or derived from biological substance; producing plants and animals for food and other items without the use of synthetic chemicals

synonym : biological

(1) **organic** soils, (2) eat **organic** food

The kidney is an **organic** component of the body.

complexity

n. the state or quality of being complicated or intricate and difficult to understand

synonym : intricacy, sophistication, elaboration

(1) cognitive **complexity**, (2) **complexity** theory

The project's **complexity** made it difficult for the team to complete it on time.

trivial

adj. of little value or importance

synonym : insignificant, minor, unimportant

(1) a **trivial** man, (2) for **trivial** reasons

The problem seemed **trivial** initially, but it became a significant issue.

ultimate

adj. furthest or highest in degree or order

synonym : highest, maximum, foremost

(1) the **ultimate** goal in life, (2) the **ultimate** luxury
Management must take **ultimate** responsibility for the accident.

inanimate

adj. not having life or spirit; not animate

synonym : lifeless, inert, passive

(1) **inanimate** nature, (2) **inanimate** matter

The **inanimate** object was not capable of movement or feeling.

delve

v. to dig or excavate deeply; to investigate or research intensively; to rummage or explore in a thorough or careful manner

synonym : dig, excavate, uncover

(1) **delve** deeper, (2) **delve** into documents

Researchers must **delve** into the intricacies of the human brain to understand mental illness.

dissolve

v. to be or cause to be absorbed by a liquid to form a part of the solution; to close down or dismiss

synonym : disband, disappear, liquefy

(1) **dissolve** the sugar, (2) officially **dissolved** the marriage

The political party **dissolved** after much internal fighting.

obvious

adj. easy to see, discover or understand

synonym : apparent, conspicuous, evident

(1) **obvious** reasons, (2) his conclusion was **obvious**

There are **obvious** differences between the two wine-producing regions.

counterintuitive

adj. contrary to what common sense would suggest
synonym : unreasonable, paradoxical, nonsensical

(1) **counterintuitive** results, (2) **counterintuitive** behavior
The **counterintuitive** nature of quantum physics has been a source of confusion for scientists for decades.

intact

adj. undamaged and complete
synonym : flawless, unchanged, entire

(1) **intact** brain, (2) **intact** forestland
Despite the scandals, his reputation remained **intact**.

stunt

n. a feat or action that is often dangerous or difficult, designed to attract attention or admiration; something that blocks or impedes growth or development; (verb) to hinder or impede growth or development, especially in a physical or mental sense

synonym : feat, accomplishment, (verb) hinder

(1) skydiving **stunt**, (2) **stunt** brain growth

The daredevil attempted a dangerous **stunt** by jumping off a tall building with a parachute.

multitasking

n. the ability to do more than one task at the same time; the state of doing more than one task at the same time

synonym : juggling, multihandling, parallelism

(1) computer **multitasking**, (2) **multitasking** ability

She could finish all her work on time because of her **multitasking** skills.

magic

n. beliefs and actions employed to influence supernatural beings and forces; any art or performance that invokes supernatural powers

synonym : fascination, illusion, wizardry

(1) a **magic** spell, (2) she is **magic**

He performed **magic** tricks with sophisticated moves.

blame

v. to think or say that someone or something did something wrong or is responsible for something bad

synonym : condemn, rebuke, find fault with

(1) **blame** circumstances for the failure, (2) **blame** the lack of knowledge

We **blamed** our impeded progress on lack of money.

maintain

v. to continue to uphold or sustain; to keep in a particular state or condition; to assert or declare something to be true

synonym : preserve, uphold, sustain

(1) **maintain** order, (2) **maintain** good health

I need to **maintain** my car regularly to prevent any major mechanical issues.

absolute

adj. perfect or complete or to the most considerable degree possible

synonym : complete, infrangible, indisputable

(1) **absolute** loyalty, (2) an **absolute** must

Gandhi had an **absolute** zeal for nonviolence.

vacuum

n. a space empty of matter; a device or tool used for cleaning or removing debris by creating suction

synonym : void, emptiness, gap

(1) **vacuum** cleaner, (2) **vacuum** packing

Please use the **vacuum** to clean up the mess on the floor.

isolate

v. to physically or socially separate someone or something from other people or things

synonym : separate, sequester, insulate

(1) **isolate** a compound, (2) **isolate** a patient

You should not **isolate** them from the community.

external

adj. belonging to or situated outside of someone or something

synonym : outside, exterior, foreign

(1) **external** factors, (2) **external** commerce

When a company discloses information to the market, an

external auditor verifies them.

disturbance

n. something that interrupts a settled and peaceful condition or that makes someone feel nervous or worried

synonym : disorder, upset, annoyance

(1) a nervous **disturbance**, (2) a **disturbance** caused by a terrorist

This building construction causes serious **disturbance** to residents.

messy

adj. disorganized and untidy

synonym : cluttered, disorganized, untidy

(1) **messy** data, (2) **messy** handling

His **messy** bedroom is always a source of frustration for his mother.

noisy

adj. making a lot of sounds, especially loud or disruptive sound

synonym : loud, cacophonous, clamorous

(1) **noisy** neighbor, (2) **noisy** party

The construction outside was creating a **noisy** distraction from my work.

environment

n. the natural world such as air, water, and land in which humans, animals, and plants live

synonym : atmosphere, surroundings, climate

(1) **environment** affairs, (2) chaotic **environment**

Every human is responsible for taking care of the Earth's **environment**.

chemical

adj. relating to or connected with chemistry;

synonym : chemic, synthetic

(1) toxic **chemicals**, (2) a **chemical** compound

The firm has grown into a large **chemical** manufacturing.

reaction

n. a response that reveals a person's feelings or attitude;
(in chemistry) a process in which one or more
substances are changed into others

synonym : response, reply, answer

(1) chemical **reaction**, (2) trigger a **reaction**

There was a chemical **reaction** of the lime with the
groundwater.

reduction

n. a decrease in size, amount, or degree

synonym : diminution, decrease, cutback

(1) **reduction** strategy, (2) a gradual **reduction**

The **reduction** in carbon emissions has been significant
since the implementation of the new policy.

deterministic

adj. characterized by an assumption of cause and effect and
the absence of chance or randomness, often used to
describe scientific or engineering calculations

synonym : predictable, predetermined, certain

(1) **deterministic** approach, (2) **deterministic** system

The **deterministic** algorithm always produces the same
result for a given input.

essentially

adv. relating to the essential features or concepts of anything

synonym : fundamentally, basically, virtually

(1) **essentially** correct, (2) become **essentially** same

Essentially, a society is an organism.

macro

n. (computing) a set of instructions that automate a
frequently used series of keystrokes or mouse actions;
(photography) a lens that allows you to take close-up
photographs; (economics) a large-scale economic policy
or system

synonym : large-scale, big-picture, major

(1) **macro** economy, (2) **macro** scale

Macro photography is a technique that allows you to take
close-up photos of small objects.

- beg** *v.* to ask for something urgently or earnestly; to appeal to someone to do something
synonym : plead, implore, entreat
(1) **beg** the question, (2) **beg** for help
She **begged** her parents to let her go to the concert.
- fame** *n.* the condition of being well-known and discussed by a large number of people as a result of one's accomplishments, abilities, and so on
synonym : celebrity, renown, stardom
(1) leap into **fame**, (2) his undying **fame**
Good **fame** is better than a good face.
- tremendous** *adj.* very great in degree or extent or amount or impact; extremely good
synonym : enormous, giant, immense
(1) **tremendous** amount, (2) **tremendous** popularity
We had a **tremendous** time yesterday.
- influential** *adj.* having significant impact or power on someone or something
synonym : potent, significant, meaningful
(1) an **influential** newspaper, (2) an **influential** politician
Early childhood experiences are very **influential** for people.
- influence** *n.* the ability to affect someone's or something's character, growth, or behavior, or the effect itself
synonym : power, leverage, effect
(1) **influence** a child's future, (2) **influence** the daily life
The former emperor had a particular **influence** even after he abdicated.
- crick** *n.* sharp pain or stiffness in the neck or back that typically results from a sudden twisting or wrenching movement
synonym : cramp, kink, spasm
(1) stiff **crick**, (2) **crick** in the back
I woke up with a **crick** in my neck from sleeping in an

awkward position.

discovery

n. the act or process of finding information, a place, or an object, or learning about something that was previously not known

synonym: finding, uncovering, detection

(1) a scientific **discovery**, (2) the great **discovery** of the century

Her research team made an important **discovery**.

helix

n. a three-dimensional spiral shape or structure, particularly like that of a spring or a DNA molecule

synonym: coil, spiral, twist

(1) **helix** structure, (2) alpha **helix**

The DNA molecule is shaped like a double **helix**.

paraphrase

v. to restate or reword a passage in one's own words, often to clarify or simplify the original meaning

synonym: rephrase, reword, reinterpret

(1) **paraphrase** a poem into prose, (2) **paraphrase** the meaning

He **paraphrased** the article in his own words to avoid being accused of plagiarism.

random

adj. made, done, or happening without method, conscious decision, or any regular pattern

synonym: incidental, arbitrary, unanticipated

(1) a **random** choice, (2) bombs fell at **random**

To find drunk drivers, police conduct **random** tests.

thermodynamics

n. the area of physics that deals with heat, work, and temperature and their relation to energy, entropy, and the physical properties of matter and radiation

(1) applied **thermodynamics**, (2) the laws of **thermodynamics**

The second law of **thermodynamics** denies the existence of

a perpetual motion engine.

jostle

v. to push, elbow, or bump against someone or something in a forceful or crowded way; to compete with or struggle against another person or group for space, resources, or attention

synonym : push, bump, elbow

(1) **jostle** for position, (2) **jostle** my elbow

I had to **jostle** through the crowded concert to get to the front of the stage.

specification

n. a detailed description of the characteristics, features, or requirements of something, typically a product or system; a written statement that outlines the standards, procedures, or requirements for a project or job

synonym : description, requirement, guideline

(1) functional **specification**, (2) engineering **specification**

The project's **specifications** outlined the goals and requirements for the team to complete.

far-reaching

adj. having a wide or significant impact or influence

synonym : extensive, widespread, broad

(1) achieve **far-reaching** reform, (2) **far-reaching** consequences

The **far-reaching** effects of the policy change are still being felt.

mention

v. to speak or write about something or someone briefly

synonym : reference, allude, cite

(1) **mention** name, (2) **mention** in a report

I **mentioned** to him that I had seen his sister at the grocery store earlier that day.

tunnel

n. an underground or underwater passage, typically for trains or cars

synonym : passageway, underground passage

(1) **tunnel** construction work, (2) **tunnel** disease

The workers had to dig through solid rock to create the vehicular **tunnel** allowing the cars to pass through the mountain.

distribute

v. to give something to a large number of individuals, or to spread or furnish something

synonym: broadcast, disperse, hand out

(1) **distribute** wealth evenly, (2) **distribute** video content

His estate was **distributed** to his sons.

entity

n. something that exists independently and has its own identity

synonym: body, object, existent

(1) legal **entity**, (2) government **entity**

A company is a distinct legal **entity**.

electron

n. a tiny particle with the negative electrical charge

synonym: negatron

(1) flow of **electrons**, (2) beam of **electrons**

The outermost **electron** shell determines the chemical properties of an atom.

bounce

v. to cause to move up or away after hitting a surface; to spring back

synonym: bound, leap, spring

(1) **bounce** across the floor, (2) **bounce** back from failure

They will **bounce** between various emotional states.

permeate

v. to spread throughout; to pass through or penetrate every part of something

synonym: penetrate, diffuse, infiltrate

(1) **permeate** the air, (2) **permeate** the fabric

The aroma of freshly baked bread **permeated** the entire bakery.

solid

adj. hard or firm; characterized by good substantial quality
synonym : stable, reliable, hard

(1) **solid** ally, (2) **solid** employment measures

The **solid-state** of water is called ice.

leap

v. to jump or spring into the air, often with the feet leaving the ground or a surface below; to move quickly or suddenly, often forward or upward

synonym : jump, bound, hop

(1) **leap** to a conclusion, (2) **leap** of faith

The athlete was able to **leap** over the hurdle with ease.

faint

adj. not strong, clear, or vigorous; slight or weak

synonym : slight, vague, soft

(1) **faint** memory, (2) **faint** aroma of roses

She heard a **faint**, nearly invisible scream.

smudge

n. a blurry or dirty mark or stain left by rubbing or smearing something; also, a bundle of material, such as sage or incense, that is burned to produce smoke for purification or ritual purposes

synonym : blemish, mark, stain

(1) ink **smudge**, (2) lipstick **smudge**

She accidentally left a **smudge** on the newly painted wall.

impenetrable

adj. not able to be passed through, entered, or understood

synonym : impassable, insurmountable, impregnable

(1) **impenetrable** fortress, (2) through an **impenetrable** fog

The jungle was so dense and **impenetrable** that it was almost impossible to find a way through.

barrier

n. a fence or other obstruction that makes it hard to move or get in; any condition that makes it difficult to make progress or to achieve an objective

synonym : border, barricade, fence

(1) cost **barrier**, (2) information **barrier**

The police placed a **barrier** across the street to halt traffic.

disappear

v. to cease to exist or be visible

synonym : fade, evaporate, vanish

(1) **disappear** without a trace, (2) **disappear** after a week

They watched the train **disappear** into the distance.

reappear

v. to show up again or return after not being heard of or seen for a period of time

synonym : come again, repeat, re-emerge

(1) **reappear** on the surface, (2) **reappear** throughout this book

Cancer has **reappeared** at the same site.

fuse

n. a small part in an electrical device or machinery that can interrupt the flow of electrical current when it is overloaded; (verb) to become plastic or fluid or liquefied from heat

synonym : (verb) melt, (verb) blend

(1) **fuse** blows, (2) **fuse** with one another

He has a short **fuse**.

hydrogen

n. the chemical element that is the lightest gas is colorless, odorless, tasteless, and combines with oxygen to form water

(1) **hydrogen** gas, (2) heavy **hydrogen**

The **hydrogen** and the oxygen react and then form water.

helium

n. a colorless, odorless, tasteless, non-toxic, inert, monatomic gas, the first in the noble gas series in the periodic table

synonym : He, light gas, noble gas

(1) **helium** atom, (2) **helium** gas

The **helium-filled** balloons floated into the sky.

catalyst

n. a person or thing that causes an important event to happen or changes the current situation rapidly; (chemistry) a substance that initiates or accelerates a chemical reaction without being changed itself

synonym :

accelerator, stimulant, motivation

(1) a **catalyst** in the process of hydrolysis, (2) **catalyst** for reform

The global financial crisis acted as a **catalyst** to unite the country.

biomolecule

n. a molecule produced by a living organism, typically composed of carbon, hydrogen, oxygen, nitrogen, and other elements, plays a vital role in various biological processes such as metabolism, energy production, and genetic information transfer

synonym: biochemical, molecule, protein

(1) **biomolecule** structure, (2) protein **biomolecule**

DNA is a complex **biomolecule** that contains the genetic information of an organism.

mystery

n. something difficult to understand or explain; a secret or enigmatic quality that adds to the fascination or interest of something; a genre of fiction that involves the solution of a crime or a puzzle

synonym: enigma, puzzle, secret

(1) **mystery** novel, (2) unsolved **mystery**

The **mystery** surrounding the disappearance of the traveler has yet to be solved by authorities.

evolve

v. to develop gradually, or to cause the development of something or someone gradually

synonym: develop, mature, grow

(1) **evolve**, (2) **evolve** over the past decade

Eyeless fish **evolved** in dark caves.

transfer

v. to move, pass, or change from one person, place, or situation to another

synonym: move, relocate, shift

(1) **transfer** a file, (2) **transfer** power

She **transferred** the money from her savings account to her

checking account.

proton

n. a very small particle with a positive charge equal to the negative charge of an electron that forms part of the nucleus of all atoms

(1) **proton** decay, (2) **proton** conductivity

The solar wind is composed almost entirely of electrons and **protons**.

efficient

adj. performing at the highest level of productivity with the least wasted effort or resources; capable of achieving maximum output with minimum wasted effort, time, or materials

synonym: productive, effective, competent

(1) **efficient** operation, (2) energy- **efficient** appliances

The new washing machine is much more **efficient** than the old one.

confirm

v. to support or establish the truth or certainty of something previously believed or suspected to be the case

synonym: affirm, verify, assure

(1) **confirm** the diagnosis, (2) **confirm** a transaction

Please write to **confirm** your reservation.

mutation

n. the way in which genes of a person, plant, animal, or other organism change and produce permanent differences

synonym: metamorphosis, transformation, alteration

(1) **mutation** of DNA, (2) hereditary **mutation**

Radiation often promotes genetic **mutations** in plants and animals.

strand

n. a very thin natural or synthetic thread, wire, hair, etc.; (verb) to leave or drive a vessel, fish, etc., aground or ashore

synonym: fiber, filament, string

(1) a **strand** of fine hair, (2) double- **strand** DNA

I heard several melodic **strands** simultaneously.

twist

v. to bend or turn something into a certain shape
synonym : wrench, turn, twirl

(1) **twist** around to the left, (2) **twist** a wet towel

He **twisted** pieces of rope out of straw.

glue

n. a sticky substance used for joining things together; a bonding agent made from animal or synthetic materials
synonym : adhesive, paste, gum

(1) **glue** stick, (2) epoxy **glue**

The carpenter applied **glue** to the cabinet joints before nailing them together.

zoom

v. to move along very quickly; (noun) the act of rising upward into the air

synonym : move quickly, dive, buzz

(1) **zoom** in on a photo, (2) **zoom** lens

He **zoomed** back in time to the soccer game.

nucleotide

n. a basic structural unit or building block of nucleic acids (DNA and RNA) consisting of a sugar molecule, a phosphate group, and a nitrogenous base (adenine, cytosine, guanine, thymine, or uracil), which combine to form the genetic code and carry information within cells

synonym : base pair, DNA building block

(1) **nucleotide** sequence, (2) DNA **nucleotide**

Adenine and thymine are complementary **nucleotides** in DNA.

prefer

v. to like, choose, or want one thing or person better than another

synonym : choose, like, favor

(1) **prefer** physics to chemistry, (2) **prefer** a window seat

The birds **prefer** open water areas with reeds around them.

vertical

adj. upright or perpendicular to a horizontal surface or line
synonym : perpendicular, upright, plumb

(1) **vertical** takeoff, (2) **vertical** axis

The ladder leaned against the **vertical** surface of the building.

hop

v. to jump lightly and quickly on one foot or both feet; to move rapidly from one place to another; to travel using an aircraft, bus, etc.

synonym : jump, bounce, skip

(1) **hop** on one foot, (2) **hop** from one place to another

The rabbit **hopped** over the fence.

separate

v. to force, take, or pull apart; mark as different

synonym : disunite, isolate, ramify

(1) **separate** video into chapter, (2) **separate** cream from milk

We need to **separate** the aspect of his personality from the part of his competence when making an investment decision.

indication

n. a sign or remark that something exists, is real, or is likely to occur

synonym : clue, hint, inkling

(1) **indication** of inflation, (2) environmental **indication**

Faces are a good **indication** of age.

implication

n. something that is inferred or indirectly stated; the act or fact of being involved in something

synonym : suggestion, association, conclusion

(1) the **implication** in a crime, (2) the **implication** of a word

His poem has a very significant **implication**.

cancer

n. abnormal growth of cells that can invade and destroy surrounding tissues and organs; a disease characterized by the uncontrolled growth and spread of abnormal cells

synonym : tumor, carcinoma, malignancy

(1) **cancer** diagnosis, (2) **cancer** research

Breast **cancer** is the most common type of cancer in women.

coherence

n. the quality of being logical and consistent

synonym: consistency, harmony, unity

(1) **coherence** in a speech, (2) lack **coherence**

The story's **coherence** could have been better when the author included too many unrelated details.

photosynthesis

n. the process through which plants and other organisms transform light energy into chemical energy, which is then released through cellular respiration to power the organism's activities.

(1) oxygenic **photosynthesis**, (2) process of **photosynthesis**

In **photosynthesis**, plants use carbon dioxide to feed themselves.

sunlight

n. the light emitted by the sun; the rays of the sun

synonym: daylight, rays, sunshine

(1) a glare of **sunlight**, (2) in direct **sunlight**

Radiation from **sunlight** has a different wavelength.

biomass

n. the total quantity of living matter in a given unit of environment, including plants, animals, and microorganisms

(1) **biomass** energy, (2) fuel **biomass**

The **biomass** in a forest can be measured by collecting and weighing all living plants within a specific area.

pathway

n. a track that constitutes or serves as a path; an approach or a way of doing something

synonym: route, footpath, trail

(1) **pathway** to understanding, (2) cellular signaling **pathways**

When the first molecule in the **pathway** receives a signal, it activates other molecules.

shock

n. a strong feeling or physical reaction to a sudden and unexpected event or experience, especially something unpleasant

synonym : amazement, surprise, stunner

(1) death from **shock**, (2) **shock-resistant**

He got an electric **shock** at work.

experimental

adj. relating to or based on new ideas, forms, methods, etc. that have not been tried before, usually to find out what effect they have

synonym : empirical, exploratory, observed

(1) **experimental** data, (2) **experimental** design

The product is still in the **experimental** stage.

photon

n. a unit or quantum of electromagnetic energy, typically regarded as a particle that is the basic constituent of all light and other forms of electromagnetic radiation

synonym : particle, quantum, light

(1) **photon** emission, (2) **photon** energy

Infrared cameras detect **photons** in the infrared range of the electromagnetic spectrum.

capture

v. to catch a person or an animal and confine them in an area which they cannot escape

synonym : catch, arrest, imprison

(1) **capture** a glimpse, (2) **capture** customers' hearts

I was able to **capture** the moment on film.

chlorophyll

n. any of a group of green pigments found in photosynthetic organisms

(1) **chlorophyll** pigment, (2) bacterial **chlorophyll**

Chlorophyll utilizes sunlight to create sugars.

optimize

v. to make the best or most effective use of something

synonym : advance, amend, improve

(1) **optimize** a process, (2) **optimize** control for cooling

The essence of economics is to **optimize** the allocation of

limited resources.

dissipate

v. to disperse or scatter widely

synonym: scatter, disperse, evaporate

(1) **dissipate** heat, (2) **dissipate** stress

The fog **dissipated**, and the air cleared up.

remarkable

adj. worthy of attention because unusual or special

synonym: outstanding, exceptional, extraordinary

(1) **remarkable** achievement, (2) the **remarkable** breadth of knowledge

The election was a **remarkable** success for the Whigs.

robin

n. a small bird from the thrush family, typically having a red breast and found across Europe, Asia, and North America

synonym: thrush, red-breast, redbird

(1) **robin** eggs, (2) **robin's** nest

I love listening to the cheerful song of the **robin** in my garden.

migrate

v. to move from one country or region to another and settle there; to move from one place to another periodically or seasonally

synonym: relocate, emigrate, roam

(1) **migrate** across borders, (2) **migrate** a service

Many Germans **migrated** to South America in the mid-19th century.

marine

adj. relating to the sea and the creatures and plants that live there

synonym: sea-dwelling, maritime, aquatic

(1) **marine** insurance, (2) variety of **marine** life

Seals and whales are **marine** animals beloved by the people.

insect

n. any small creature that has six legs and a body divided into three sections

(1) **insect** antenna, (2) **insect** biology

These **insects** are more prevalent above a certain latitude.

navigate

v. to plan and direct the way that a ship, plane, etc. will travel, often by using a map

synonym : guide, helm, voyage

(1) **navigate** the Pacific, (2) **navigate** through a document
Our knowledge helps **navigate** our clients successfully.

magnetic

adj. having the properties of attracting or repelling certain materials containing iron or steel

synonym : attractive, drawing, hypnotic

(1) **magnetic** field, (2) a **magnetic** tape

The **magnetic** force of the earth keeps our planet spinning.

fridge

n. a piece of electrical equipment in which food can be stored at low temperatures so that it stays fresh

synonym : refrigerator

(1) **fridge** magnet, (2) fill the **fridge**

She left the **fridge** door open inadvertently.

magnet

n. an object or substance that can attract certain materials, such as iron or steel

synonym : magnetite, lodestone, attracting substance

(1) **magnet** attraction, (2) permanent **magnet**

The MRI machine uses **magnets** to produce images of the body's internal organs.

doubt

n. a feeling of being uncertain about something, especially about how good or accurate it is

synonym : distrust, suspect, mistrust

(1) dispel **doubts**, (2) no **doubt** about the news

Doubt is the start, not the end, of intelligence.

germ

n. a very tiny living that causes the disease; a piece of something such as an organism, concept, etc., capable of growing into a new one or part of one

synonym : bacterium, microbe, pathogen

(1) antibiotic-resistant **germ**, (2) a **germ-free** environment
The **germ** of his idea came from watching birds flying in flocks.

ornithologist

n. a person who studies, observes or is an expert in the scientific field of ornithology, which is the study of birds
synonym: birdwatcher, avian expert

(1) amateur **ornithologist**, (2) **ornithologist** group
The documentary featured interviews with several renowned **ornithologists** discussing the bird population decline.

built-in

adj. included as an integral part of something
synonym: integrated, inherent, equipped

(1) **built-in** feature, (2) **built-in** battery
The new car had a **built-in** navigation system.

compass

n. a navigational instrument for finding directions with a needle that can move easily and that always points to the north; the limit or range of capability
synonym: guideline, borderline, ambit

(1) read a **compass**, (2) sailing without a **compass**
The results were beyond our **compass** of imagination.

puzzle

n. a situation that is difficult to follow or solve; a game, problem, or toy that tests a person's ingenuity or knowledge; (verb) to cause someone to feel confused because of something difficult to understand
synonym: plight, maze, (verb) perplex

(1) crossword **puzzle**, (2) mathematical **puzzle**
This jigsaw **puzzle** is challenging because there are no pictures.

entanglement

n. involvement in a complicated or difficult situation; a tangled mass
synonym: snarl, tangle, knot

(1) **entanglement** in conflict, (2) romantic **entanglement**

The **entanglement** of the fishing net was making it difficult for the whales to swim.

retina

n. the innermost light-sensitive membrane covering the back wall of the eyeball

(1) **retinal** cells, (2) **retina** scanner

Damage to the **retina** may play a role in the development of glaucoma.

cryptochrome

n. a type of protein found in plant and animal cells involved in regulating biological functions, particularly in response to light, which plays a crucial role in the circadian rhythm and other light-dependent processes

synonym : photoreceptor, blue light receptor

(1) mutation in the **cryptochrome** gene, (2) mammalian **cryptochrome**

Scientists recently discovered a new type of **cryptochrome** protein crucial in regulating circadian rhythms.

sensitive

adj. able to notice slight changes, signals, or influences; able to feel or perceive other's feelings; susceptible to the things people say or do

synonym : exposed, susceptible, keen

(1) **sensitive** documents, (2) baby with **sensitive** skin

The teacher is very **sensitive** to children's feelings.

spook

v. to frighten or scare, and often provoke into violent action; (noun) someone unpleasantly strange or eccentric; ghost

synonym : frighten, scare, discomfort

(1) **spook** the fish, (2) **spook** the children

The bankruptcy of that company **spooked** markets.

distance

n. the amount of space between two points, measured in units such as miles, meters, or kilometers; the extent, scope, or range between two things, such as distance or emotional distance

synonym :

space, gap, span

(1) driving **distance**, (2) social **distance**

The marathon runner covered a long **distance** in a short amount of time.

uncomfortable

adj. providing or feeling physical discomfort or slight pain

synonym: comfortless, discomforting, painful

(1) an **uncomfortable** silence, (2) with an **uncomfortable** face

His abusive words made me **uncomfortable**.

infancy

n. the state or period of being a baby or very young child

synonym: childhood, babyhood, juvenescence

(1) **infancy** stage, (2) in early **infancy**

The technology is still in its **infancy** and has much room for improvement.

pervade

v. to spread throughout something; to permeate

synonym: permeate, penetrate, suffuse

(1) **pervade** society, (2) **pervade** an atmosphere

The smell of baking bread **pervaded** the kitchen.

utilize

v. to use something for a practical purpose in an effective way

synonym: employ, use, operate

(1) **utilize** a different approach, (2) **utilize** a catheter

The cook **utilized** the leftover oxtail to make soup.

Session 2: Spelling

1. stay phy_____ly fit
adv. in a way related to a person's body or appearance rather than their mind
2. stress pr_____n
n. a molecule made up of a long chain of amino acids, which is essential for the structure and function of the body's tissues
3. sh__k-resistant
n. a strong feeling or physical reaction to a sudden and unexpected event or experience, especially something unpleasant
4. sp__k the fish
v. to frighten or scare, and often provoke into violent action; (noun) someone unpleasantly strange or eccentric; ghost
5. fu__y memory
adj. having a soft and indistinct outline or covered with fine, soft, and hairlike fibers
6. the imp_____on of a word
n. something that is inferred or indirectly stated; the act or fact of being involved in something
7. mat_____cs competition
n. the science dealing with the logic of quantities, shapes, spaces, and arrangement
8. b_g the question
v. to ask for something urgently or earnestly; to appeal to someone to do something
9. bacterial chl_____ll
n. any of a group of green pigments found in photosynthetic organisms

ANSWERS: 1. physically, 2. protein, 3. shock, 4. spook, 5. fuzzy, 6. implication, 7. mathematics, 8. beg, 9. chlorophyll

10. ph___n emission *n.* a unit or quantum of electromagnetic energy, typically regarded as a particle that is the basic constituent of all light and other forms of electromagnetic radiation
11. ro__n eggs *n.* a small bird from the thrush family, typically having a red breast and found across Europe, Asia, and North America
12. a glare of su_____ht *n.* the light emitted by the sun; the rays of the sun
13. ph_____m limb pain *n.* a ghost or a spirit of a dead person; something existing only in your imagination or perception
14. bo___e back from failure *v.* to cause to move up or away after hitting a surface; to spring back
15. for tr_____l reasons *adj.* of little value or importance
16. rem_____le achievement *adj.* worthy of attention because unusual or special
17. me__y handling *adj.* disorganized and untidy
18. a star of the first ma_____de *n.* the extent, level, importance, or amount of something
19. social di_____ce *n.* the amount of space between two points, measured in units such as miles, meters, or kilometers; the extent, scope, or range between two things, such as distance or emotional distance
20. se_____te cream from milk *v.* to force, take, or pull apart; mark as different

ANSWERS: 10. photon, 11. robin, 12. sunlight, 13. phantom, 14. bounce, 15. trivial, 16. remarkable, 17. messy, 18. magnitude, 19. distance, 20. separate

21. ma___t attraction *n.* an object or substance that can attract certain materials, such as iron or steel
22. tw__t a wet towel *v.* to bend or turn something into a certain shape
23. probabilistic qu_____m theory *n.* the smallest amount or unit of something, especially (electromagnetic) energy
24. exp_____tal data *adj.* relating to or based on new ideas, forms, methods, etc. that have not been tried before, usually to find out what effect they have
25. in___t antenna *n.* any small creature that has six legs and a body divided into three sections
26. talented ph_____st *n.* a scientist who specializes in the field of physics
27. in_____te nature *adj.* not having life or spirit; not animate
28. de_____p a skill *v.* to grow or expand; to improve or refine through a process of progress and refinement, often to achieve greater sophistication or complexity; to elaborate or add detail to something that is in the process of being created
29. in___t brain *adj.* undamaged and complete
30. bo___e across the floor *v.* to cause to move up or away after hitting a surface; to spring back
31. theory of the un_____se *n.* everything that exists, especially all physical matter, including planets, stars, galaxies, and all other forms of matter and energy

ANSWERS: 21. magnet, 22. twist, 23. quantum, 24. experimental, 25. insect, 26. physicist, 27. inanimate, 28. develop, 29. intact, 30. bounce, 31. universe

32. mo___n poetry *adj.* of or belonging to the present time or recent times
33. mo_____le behavior *n.* a group of two or more atoms held together by attractive forces known as chemical bonds
34. eve_____ly become obsolete *adv.* finally, particularly after a long time or a lot of struggle, complications, and so on
35. ink sm___e *n.* a blurry or dirty mark or stain left by rubbing or smearing something; also, a bundle of material, such as sage or incense, that is burned to produce smoke for purification or ritual purposes
36. in_____ce a child's future *n.* the ability to affect someone's or something's character, growth, or behavior, or the effect itself
37. ev___e *v.* to develop gradually, or to cause the development of something or someone gradually
38. the great di_____ry of the century *n.* the act or process of finding information, a place, or an object, or learning about something that was previously not known
39. mammalian cry_____ome *n.* a type of protein found in plant and animal cells involved in regulating biological functions, particularly in response to light, which plays a crucial role in the circadian rhythm and other light-dependent processes
40. int_____ary research *adj.* involving or combining several academic disciplines or fields of study

ANSWERS: 32. modern, 33. molecule, 34. eventually, 35. smudge, 36. influence, 37. evolve, 38. discovery, 39. cryptochrome, 40. interdisciplinary

41. in direct su____ht
n. the light emitted by the sun; the rays of the sun
42. fr___e magnet
n. a piece of electrical equipment in which food can be stored at low temperatures so that it stays fresh
43. laws of qu____m mechanics
n. the smallest amount or unit of something, especially (electromagnetic) energy
44. bombs fell at ra___m
adj. made, done, or happening without method, conscious decision, or any regular pattern
45. pe____te the air
v. to spread throughout; to pass through or penetrate every part of something
46. cr__k in the back
n. sharp pain or stiffness in the neck or back that typically results from a sudden twisting or wrenching movement
47. sailing without a co____s
n. a navigational instrument for finding directions with a needle that can move easily and that always points to the north; the limit or range of capability
48. theoretical ph____st
n. a scientist who specializes in the field of physics
49. trigger a re____on
n. a response that reveals a person's feelings or attitude; (in chemistry) a process in which one or more substances are changed into others
50. pr___n decay
n. a very small particle with a positive charge equal to the negative charge of an electron that forms part of the nucleus of all atoms

ANSWERS: 41. sunlight, 42. fridge, 43. quantum, 44. random, 45. permeate, 46. crick, 47. compass, 48. physicist, 49. reaction, 50. proton

51. ve____al axis *adj.* upright or perpendicular to a horizontal surface or line
52. neutral hydrogen a__ms *n.* the smallest unit of ordinary matter that forms a chemical element, composed of a nucleus and one or more electrons bound to the nucleus
53. de__e into documents *v.* to dig or excavate deeply; to investigate or research intensively; to rummage or explore in a thorough or careful manner
54. ro__n's nest *n.* a small bird from the thrush family, typically having a red breast and found across Europe, Asia, and North America
55. in early in____y *n.* the state or period of being a baby or very young child
56. the ch_____ry of soil *n.* the branch of the natural sciences dealing with the composition of substances and their properties and reactions
57. em_____ng technologies *adj.* starting to exist, mature, or become well-known
58. cellular signaling pa_____ys *n.* a track that constitutes or serves as a path; an approach or a way of doing something
59. chemical re_____on *n.* a response that reveals a person's feelings or attitude; (in chemistry) a process in which one or more substances are changed into others
60. pro_____tic model *adj.* characterized by the influence of chance or probability; involving the use of statistical models or methods to estimate likelihoods or risks

ANSWERS: 51. vertical, 52. atom, 53. delve, 54. robin, 55. infancy, 56. chemistry, 57. emerging, 58. pathway, 59. reaction, 60. probabilistic

61. co_____m a transaction *v.* to support or establish the truth or certainty of something previously believed or suspected to be the case
62. na_____te through a document *v.* to plan and direct the way that a ship, plane, etc. will travel, often by using a map
63. sp_____ic instructions *adj.* clearly defined or particular to a certain thing or situation; distinct, explicit, and precise
64. hereditary mu_____on *n.* the way in which genes of a person, plant, animal, or other organism change and produce permanent differences
65. co_____ce in a speech *n.* the quality of being logical and consistent
66. tr_____on cubic feet *n.* the number 1,000,000,000,000; a million million
67. heavy hy_____en *n.* the chemical element that is the lightest gas is colorless, odorless, tasteless, and combines with oxygen to form water
68. Fourier spe_____ope *n.* an optical instrument used for spectrographic analysis (= measurement of properties of light over a specific portion of the electromagnetic spectrum)
69. mi_____e across borders *v.* to move from one country or region to another and settle there; to move from one place to another periodically or seasonally

ANSWERS: 61. confirm, 62. navigate, 63. specific, 64. mutation, 65. coherence, 66. trillion, 67. hydrogen, 68. spectroscope, 69. migrate

70. far_____ing consequences *adj.* having a wide or significant impact or influence
71. mi_____e a service *v.* to move from one country or region to another and settle there; to move from one place to another periodically or seasonally
72. he____m atom *n.* a colorless, odorless, tasteless, non-toxic, inert, monatomic gas, the first in the noble gas series in the periodic table
73. lack co_____ce *n.* the quality of being logical and consistent
74. his conclusion was ob_____s *adj.* easy to see, discover or understand
75. in_____te matter *adj.* not having life or spirit; not animate
76. ma__o economy *n.* (computing) a set of instructions that automate a frequently used series of keystrokes or mouse actions; (photography) a lens that allows you to take close-up photographs; (economics) a large-scale economic policy or system
77. a dis_____ce caused by a terrorist *n.* something that interrupts a settled and peaceful condition or that makes someone feel nervous or worried
78. imp_____ble fortress *adj.* not able to be passed through, entered, or understood
79. a ch_____al compound *adj.* relating to or connected with chemistry;
80. ab_____te loyalty *adj.* perfect or complete or to the most considerable degree possible

ANSWERS: 70. far-reaching, 71. migrate, 72. helium, 73. coherence, 74. obvious, 75. inanimate, 76. macro, 77. disturbance, 78. impenetrable, 79. chemical, 80. absolute

81. a tr____l man *adj.* of little value or importance
82. fu__y logic *adj.* having a soft and indistinct outline or covered with fine, soft, and hairlike fibers
83. the me_____sm for DNA replication *n.* a part of a machine, or a set of parts that performs a task; a natural or established process that occurs during a specific situation or reaction
84. infrared spe_____ope *n.* an optical instrument used for spectrographic analysis (= measurement of properties of light over a specific portion of the electromagnetic spectrum)
85. he__x structure *n.* a three-dimensional spiral shape or structure, particularly like that of a spring or a DNA molecule
86. nu_____r fusion *adj.* of or relating to or constituting the nucleus of an atom; deriving destructive energy from the release of atomic energy
87. me_____cs of the game *n.* the branch of physics that deals with the study of motion, forces, and energy; (mechanic) someone whose occupation is repairing and maintaining automobiles
88. na_____te the Pacific *v.* to plan and direct the way that a ship, plane, etc. will travel, often by using a map
89. ca_____e customers' hearts *v.* to catch a person or an animal and confine them in an area which they cannot escape

ANSWERS: 81. trivial, 82. fuzzy, 83. mechanism, 84. spectroscope, 85. helix, 86. nuclear, 87. mechanics, 88. navigate, 89. capture

90. a ma__c spell *n.* beliefs and actions employed to influence supernatural beings and forces; any art or performance that invokes supernatural powers
91. the st_____re of a machine *n.* the way of construction of something and the arrangement of its parts, or a complex thing constructed of many parts
92. bu_____in battery *adj.* included as an integral part of something
93. mo_____ar structure *adj.* of or relating to molecules (= a group of two or more atoms held together by attractive forces known as chemical bonds)
94. ca_____e a glimpse *v.* to catch a person or an animal and confine them in an area which they cannot escape
95. un_____in a structure *v.* to support or strengthen the foundations of something
96. ph___n energy *n.* a unit or quantum of electromagnetic energy, typically regarded as a particle that is the basic constituent of all light and other forms of electromagnetic radiation
97. a scientific di_____ry *n.* the act or process of finding information, a place, or an object, or learning about something that was previously not known
98. ex_____ng news *adj.* causing a lot of interest or excitement

ANSWERS: 90. magic, 91. structure, 92. built-in, 93. molecular, 94. capture, 95. underpin, 96. photon, 97. discovery, 98. exciting

99. eve_____ly succeed *adv.* finally, particularly after a long time or a lot of struggle, complications, and so on
100. ca____r diagnosis *n.* abnormal growth of cells that can invade and destroy surrounding tissues and organs; a disease characterized by the uncontrolled growth and spread of abnormal cells
101. ev____e over the past decade *v.* to develop gradually, or to cause the development of something or someone gradually
102. phy_____ly and mentally *adv.* in a way related to a person's body or appearance rather than their mind
103. dis_____te wealth evenly *v.* to give something to a large number of individuals, or to spread or furnish something
104. at____c nucleus *adj.* of or relating to atom (= the smallest component of an element)
105. use of nu_____r power *adj.* of or relating to or constituting the nucleus of an atom; deriving destructive energy from the release of atomic energy
106. com_____ty theory *n.* the state or quality of being complicated or intricate and difficult to understand
107. pr_____n synthesis *n.* a molecule made up of a long chain of amino acids, which is essential for the structure and function of the body's tissues
108. b__d as a family *n.* a close emotional connection between two or more people; a certificate of debt that a government or corporation issues to raise money

ANSWERS: 99. eventually, 100. cancer, 101. evolve, 102. physically, 103. distribute, 104. atomic, 105. nuclear, 106. complexity, 107. protein, 108. bond

109. read a co____s *n.* a navigational instrument for finding directions with a needle that can move easily and that always points to the north; the limit or range of capability
110. natural phe_____on *n.* something that exists and can be perceptible, especially one that is not fully understood
111. lipstick sm___e *n.* a blurry or dirty mark or stain left by rubbing or smearing something; also, a bundle of material, such as sage or incense, that is burned to produce smoke for purification or ritual purposes
112. cell and molecular bi_____y *n.* the scientific study of life and the natural processes of living things
113. tw__t around to the left *v.* to bend or turn something into a certain shape
114. an unc_____ble silence *adj.* providing or feeling physical discomfort or slight pain
115. z__m in on a photo *v.* to move along very quickly; (noun) the act of rising upward into the air
116. he___m gas *n.* a colorless, odorless, tasteless, non-toxic, inert, monatomic gas, the first in the noble gas series in the periodic table
117. co_____m the diagnosis *v.* to support or establish the truth or certainty of something previously believed or suspected to be the case
118. re___al cells *n.* the innermost light-sensitive membrane covering the back wall of the eyeball

ANSWERS: 109. compass, 110. phenomenon, 111. smudge, 112. biology, 113. twist, 114. uncomfortable, 115. zoom, 116. helium, 117. confirm, 118. retina

119. di_____te heat *v.* to disperse or scatter widely
120. pa_____y to understanding *n.* a track that constitutes or serves as a path; an approach or a way of doing something
121. tu____l construction work *n.* an underground or underwater passage, typically for trains or cars
122. a ph_____m company *n.* a ghost or a spirit of a dead person; something existing only in your imagination or perception
123. b_g for help *v.* to ask for something urgently or earnestly; to appeal to someone to do something
124. form a nu_____s *n.* the central and most important part of something; (biology) a part of the cell containing DNA and RNA and responsible for growth and reproduction; (physics) the very dense central region of an atom
125. toxic ch_____als *adj.* relating to or connected with chemistry;
126. ut_____e a different approach *v.* to use something for a practical purpose in an effective way
127. sewing ne____e *n.* a thin, pointed object typically used for sewing or medical purposes; a metal or plastic instrument used for administering injections or drawing blood
128. st_____re and function of the brain *n.* the way of construction of something and the arrangement of its parts, or a complex thing constructed of many parts

ANSWERS: 119. dissipate, 120. pathway, 121. tunnel, 122. phantom, 123. beg, 124. nucleus, 125. chemical, 126. utilize, 127. needle, 128. structure

129. chaotic env_____nt *n.* the natural world such as air, water, and land in which humans, animals, and plants live
130. legal en____y *n.* something that exists independently and has its own identity
131. fill the fr____e *n.* a piece of electrical equipment in which food can be stored at low temperatures so that it stays fresh
132. ca_____st for reform *n.* a person or thing that causes an important event to happen or changes the current situation rapidly; (chemistry) a substance that initiates or accelerates a chemical reaction without being changed itself
133. is_____e a patient *v.* to physically or socially separate someone or something from other people or things
134. so__d ally *adj.* hard or firm; characterized by good substantial quality
135. expansion of the un_____se *n.* everything that exists, especially all physical matter, including planets, stars, galaxies, and all other forms of matter and energy
136. cou_____ive results *adj.* contrary to what common sense would suggest
137. flow of el_____ons *n.* a tiny particle with the negative electrical charge
138. me_____n name *v.* to speak or write about something or someone briefly

ANSWERS: 129. environment, 130. entity, 131. fridge, 132. catalyst, 133. isolate, 134. solid, 135. universe, 136. counterintuitive, 137. electron, 138. mention

139. en___e reaction *n.* a substance produced by a living organism that acts as a catalyst to bring about a specific biochemical reaction
140. mathematical pu___e *n.* a situation that is difficult to follow or solve; a game, problem, or toy that tests a person's ingenuity or knowledge; (verb) to cause someone to feel confused because of something difficult to understand
141. exp_____tal design *adj.* relating to or based on new ideas, forms, methods, etc. that have not been tried before, usually to find out what effect they have
142. di_____ar after a week *v.* to cease to exist or be visible
143. h_p from one place to another *v.* to jump lightly and quickly on one foot or both feet; to move rapidly from one place to another; to travel using an aircraft, bus, etc.
144. pe_____e society *v.* to spread throughout something; to permeate
145. variety of ma___e life *adj.* relating to the sea and the creatures and plants that live there
146. un_____in democratization *v.* to support or strengthen the foundations of something
147. an ab_____te must *adj.* perfect or complete or to the most considerable degree possible
148. ma_____ic field *adj.* having the properties of attracting or repelling certain materials containing iron or steel

ANSWERS: 139. enzyme, 140. puzzle, 141. experimental, 142. disappear, 143. hop, 144. pervade, 145. marine, 146. underpin, 147. absolute, 148. magnetic

149. fun_____al education *adj.* forming an essential base or core from which everything else develops or is affected
150. no__y party *adj.* making a lot of sounds, especially loud or disruptive sound
151. nuc_____de sequence *n.* a basic structural unit or building block of nucleic acids (DNA and RNA) consisting of a sugar molecule, a phosphate group, and a nitrogenous base (adenine, cytosine, guanine, thymine, or uracil), which combine to form the genetic code and carry information within cells
152. a ma_____ic tape *adj.* having the properties of attracting or repelling certain materials containing iron or steel
153. tr_____er a file *v.* to move, pass, or change from one person, place, or situation to another
154. de_____p a strategy *v.* to grow or expand; to improve or refine through a process of progress and refinement, often to achieve greater sophistication or complexity; to elaborate or add detail to something that is in the process of being created
155. sp_____te on the outcome *v.* to form a theory or conjecture or guess about a subject without solid evidence
156. dispel do__ts *n.* a feeling of being uncertain about something, especially about how good or accurate it is
157. tr_____er power *v.* to move, pass, or change from one person, place, or situation to another

ANSWERS: 149. fundamental, 150. noisy, 151. nucleotide, 152. magnetic, 153. transfer, 154. develop, 155. speculate, 156. doubt, 157. transfer

158. z__m lens *v.* to move along very quickly; (noun) the act of rising upward into the air
159. epoxy g__e *n.* a sticky substance used for joining things together; a bonding agent made from animal or synthetic materials
160. a good grounding in mat_____cs *n.* the science dealing with the logic of quantities, shapes, spaces, and arrangement
161. op_____ze a process *v.* to make the best or most effective use of something
162. se_____ve documents *adj.* able to notice slight changes, signals, or influences; able to feel or perceive other's feelings; susceptible to the things people say or do
163. oxygen a__m *n.* the smallest unit of ordinary matter that forms a chemical element, composed of a nucleus and one or more electrons bound to the nucleus
164. ast_____ed at the success *adj.* extremely surprised and upset
165. small mo_____les *n.* a group of two or more atoms held together by attractive forces known as chemical bonds
166. process of pho_____sis *n.* the process through which plants and other organisms transform light energy into chemical energy, which is then released through cellular respiration to power the organism's activities.
167. jo_____e for position *v.* to push, elbow, or bump against someone or something in a forceful or crowded way; to compete with or struggle against another person or group for space, resources, or attention

ANSWERS: 158. zoom, 159. glue, 160. mathematics, 161. optimize, 162. sensitive, 163. atom, 164. astonished, 165. molecule, 166. photosynthesis, 167. jostle

168. environmental ind_____on *n.* a sign or remark that something exists, is real, or is likely to occur
169. government en____y *n.* something that exists independently and has its own identity
170. par_____se the meaning *v.* to restate or reword a passage in one's own words, often to clarify or simplify the original meaning
171. ex_____ng football player *adj.* causing a lot of interest or excitement
172. st__t brain growth *n.* a feat or action that is often dangerous or difficult, designed to attract attention or admiration; something that blocks or impedes growth or development; (verb) to hinder or impede growth or development, especially in a physical or mental sense
173. my_____y novel *n.* something difficult to understand or explain; a secret or enigmatic quality that adds to the fascination or interest of something; a genre of fiction that involves the solution of a crime or a puzzle
174. ef_____nt operation *adj.* performing at the highest level of productivity with the least wasted effort or resources; capable of achieving maximum output with minimum wasted effort, time, or materials
175. beam of el_____ons *n.* a tiny particle with the negative electrical charge
176. fa__t aroma of roses *adj.* not strong, clear, or vigorous; slight or weak

ANSWERS: 168. indication, 169. entity, 170. paraphrase, 171. exciting, 172. stunt, 173. mystery, 174. efficient, 175. electron, 176. faint

177. become ess_____ly same *adv.* relating to the essential features or concepts of anything
178. in____t biology *n.* any small creature that has six legs and a body divided into three sections
179. ma____e insurance *adj.* relating to the sea and the creatures and plants that live there
180. or_____c soils *adj.* of or derived from biological substance; producing plants and animals for food and other items without the use of synthetic chemicals
181. mu_____on of DNA *n.* the way in which genes of a person, plant, animal, or other organism change and produce permanent differences
182. a dependent do____n *n.* a specific sphere of influence or control; a specific field of knowledge or expertise
183. a gradual re_____on *n.* a decrease in size, amount, or degree
184. series of exp_____nts *n.* the scientific test conducted to observe what happens and gain new knowledge
185. permanent ma____t *n.* an object or substance that can attract certain materials, such as iron or steel
186. at____c bomb *adj.* of or relating to atom (= the smallest component of an element)
187. baby with se_____ve skin *adj.* able to notice slight changes, signals, or influences; able to feel or perceive other's feelings; susceptible to the things people say or do
188. applied the_____ics *n.* the area of physics that deals with heat, work, and temperature and their relation to energy, entropy, and the physical properties of matter and radiation

ANSWERS: 177. essentially, 178. insect, 179. marine, 180. organic, 181. mutation, 182. domain, 183. reduction, 184. experiment, 185. magnet, 186. atomic, 187. sensitive, 188. thermodynamics

189. det_____tic approach *adj.* characterized by an assumption of cause and effect and the absence of chance or randomness, often used to describe scientific or engineering calculations
190. driving di_____ce *n.* the amount of space between two points, measured in units such as miles, meters, or kilometers; the extent, scope, or range between two things, such as distance or emotional distance
191. industry-sp_____ic regulations *adj.* clearly defined or particular to a certain thing or situation; distinct, explicit, and precise
192. fire st__k *v.* to put something, usually a sharp object, into something; to restrict yourself to doing or using one certain thing and not change; (noun) a thin piece of wood or other material
193. DNA nuc_____de *n.* a basic structural unit or building block of nucleic acids (DNA and RNA) consisting of a sugar molecule, a phosphate group, and a nitrogenous base (adenine, cytosine, guanine, thymine, or uracil), which combine to form the genetic code and carry information within cells
194. energy-ef_____nt appliances *adj.* performing at the highest level of productivity with the least wasted effort or resources; capable of achieving maximum output with minimum wasted effort, time, or materials

ANSWERS: 189. deterministic, 190. distance, 191. specific, 192. stick, 193. nucleotide, 194. efficient

195. eat or _____c food *adj.* of or derived from biological substance; producing plants and animals for food and other items without the use of synthetic chemicals
196. ent _____ent in conflict *n.* involvement in a complicated or difficult situation; a tangled mass
197. pe _____e an atmosphere *v.* to spread throughout something; to permeate
198. unsolved my _____y *n.* something difficult to understand or explain; a secret or enigmatic quality that adds to the fascination or interest of something; a genre of fiction that involves the solution of a crime or a puzzle
199. hy _____en gas *n.* the chemical element that is the lightest gas is colorless, odorless, tasteless, and combines with oxygen to form water
200. an inf _____al newspaper *adj.* having significant impact or power on someone or something
201. the ul _____te goal in life *adj.* furthest or highest in degree or order
202. a g__m-free environment *n.* a very tiny living that causes the disease; a piece of something such as an organism, concept, etc., capable of growing into a new one or part of one
203. st__k a key in a lock *v.* to put something, usually a sharp object, into something; to restrict yourself to doing or using one certain thing and not change; (noun) a thin piece of wood or other material

ANSWERS: 195. organic, 196. entanglement, 197. pervade, 198. mystery, 199. hydrogen, 200. influential, 201. ultimate, 202. germ, 203. stick

204. ex____al factors *adj.* belonging to or situated outside of someone or something
205. sp__k the children *v.* to frighten or scare, and often provoke into violent action; (noun) someone unpleasantly strange or eccentric; ghost
206. in_____ce the daily life *n.* the ability to affect someone's or something's character, growth, or behavior, or the effect itself
207. the nu____s of a team *n.* the central and most important part of something; (biology) a part of the cell containing DNA and RNA and responsible for growth and reproduction; (physics) the very dense central region of an atom
208. int_____ion education *n.* a preliminary explanation or remarks given before the start of a text, performance, or event; the act of bringing something new into existence or introducing something to a wider audience or new market
209. so__d employment measures *adj.* hard or firm; characterized by good substantial quality
210. bl__e the lack of knowledge *v.* to think or say that someone or something did something wrong or is responsible for something bad
211. fuel bi____s *n.* the total quantity of living matter in a given unit of environment, including plants, animals, and microorganisms
212. re____ar on the surface *v.* to show up again or return after not being heard of or seen for a period of time

ANSWERS: 204. external, 205. spook, 206. influence, 207. nucleus, 208. introduction, 209. solid, 210. blame, 211. biomass, 212. reappear

213. alpha he__x *n.* a three-dimensional spiral shape or structure, particularly like that of a spring or a DNA molecule
214. mo_____ar biology *adj.* of or relating to molecules (= a group of two or more atoms held together by attractive forces known as chemical bonds)
215. orn_____ist group *n.* a person who studies, observes or is an expert in the scientific field of ornithology, which is the study of birds
216. double-st___d DNA *n.* a very thin natural or synthetic thread, wire, hair, etc.; (verb) to leave or drive a vessel, fish, etc., aground or ashore
217. na_____le device *adj.* on a scale that can be measured in nanometres (= one billionth of a meter); on a very small scale
218. stiff cr__k *n.* sharp pain or stiffness in the neck or back that typically results from a sudden twisting or wrenching movement
219. ind_____on of inflation *n.* a sign or remark that something exists, is real, or is likely to occur
220. env_____nt affairs *n.* the natural world such as air, water, and land in which humans, animals, and plants live
221. ve_____al takeoff *adj.* upright or perpendicular to a horizontal surface or line
222. bl__e circumstances for the failure *v.* to think or say that someone or something did something wrong or is responsible for something bad

ANSWERS: 213. helix, 214. molecular, 215. ornithologist, 216. strand, 217. nanoscale, 218. crick, 219. indication, 220. environment, 221. vertical, 222. blame

223. mul_____ing ability *n.* the ability to do more than one task at the same time; the state of doing more than one task at the same time
224. di_____ve the sugar *v.* to be or cause to be absorbed by a liquid to form a part of the solution; to close down or dismiss
225. pr_____s improvement *n.* a series of actions or operations performed to achieve a particular outcome or goal; a systematic procedure or approach used to accomplish a specific task or objective; a method of treating milk to make it suitable for consumption or use in other dairy products
226. in____t forestland *adj.* undamaged and complete
227. officially di_____ved the marriage *v.* to be or cause to be absorbed by a liquid to form a part of the solution; to close down or dismiss
228. computer mul_____ing *n.* the ability to do more than one task at the same time; the state of doing more than one task at the same time
229. ex_____al commerce *adj.* belonging to or situated outside of someone or something
230. laws of ph_____s *n.* the science of matter and energy and their interactions
231. lack of digestive en_____es *n.* a substance produced by a living organism that acts as a catalyst to bring about a specific biochemical reaction
232. va_____m cleaner *n.* a space empty of matter; a device or tool used for cleaning or removing debris by creating suction

ANSWERS: 223. multitasking, 224. dissolve, 225. process, 226. intact, 227. dissolve, 228. multitasking, 229. external, 230. physics, 231. enzyme, 232. vacuum

233. pa_____le energy *n.* a small piece of something; a word or piece of a term with grammatical function but little or no significance
234. achieve far_____ing reform *adj.* having a wide or significant impact or influence
235. things at the na_____le *adj.* on a scale that can be measured in nanometres (= one billionth of a meter); on a very small scale
236. through an imp_____ble fog *adj.* not able to be passed through, entered, or understood
237. l__p of faith *v.* to jump or spring into the air, often with the feet leaving the ground or a surface below; to move quickly or suddenly, often forward or upward
238. tre_____us amount *adj.* very great in degree or extent or amount or impact; extremely good
239. tre_____us popularity *adj.* very great in degree or extent or amount or impact; extremely good
240. global b__d market *n.* a close emotional connection between two or more people; a certificate of debt that a government or corporation issues to raise money
241. historical phe_____on *n.* something that exists and can be perceptible, especially one that is not fully understood
242. me_____n in a report *v.* to speak or write about something or someone briefly
243. the rem_____le breadth of knowledge *adj.* worthy of attention because unusual or special

ANSWERS: 233. particle, 234. far-reaching, 235. nanoscale, 236. impenetrable, 237. leap, 238. tremendous, 239. tremendous, 240. bond, 241. phenomenon, 242. mention, 243. remarkable

244. skydiving st__t *n.* a feat or action that is often dangerous or difficult, designed to attract attention or admiration; something that blocks or impedes growth or development; (verb) to hinder or impede growth or development, especially in a physical or mental sense
245. ne___e prick *n.* a thin, pointed object typically used for sewing or medical purposes; a metal or plastic instrument used for administering injections or drawing blood
246. h_p on one foot *v.* to jump lightly and quickly on one foot or both feet; to move rapidly from one place to another; to travel using an aircraft, bus, etc.
247. medical l_b *n.* a workplace for the conduct of scientific research; a laboratory
248. ob____s reasons *adj.* easy to see, discover or understand
249. me__y data *adj.* disorganized and untidy
250. fa__t memory *adj.* not strong, clear, or vigorous; slight or weak
251. death from sh__k *n.* a strong feeling or physical reaction to a sudden and unexpected event or experience, especially something unpleasant
252. di_____ar without a trace *v.* to cease to exist or be visible
253. ma__o scale *n.* (computing) a set of instructions that automate a frequently used series of keystrokes or mouse actions; (photography) a lens that allows you to take close-up photographs; (economics) a large-scale economic policy or system

ANSWERS: 244. stunt, 245. needle, 246. hop, 247. lab, 248. obvious, 249. messy, 250. faint, 251. shock, 252. disappear, 253. macro

254. ca___r research *n.* abnormal growth of cells that can invade and destroy surrounding tissues and organs; a disease characterized by the uncontrolled growth and spread of abnormal cells
255. professor of ch_____ry *n.* the branch of the natural sciences dealing with the composition of substances and their properties and reactions
256. exp_____nt design *n.* the scientific test conducted to observe what happens and gain new knowledge
257. jo___e my elbow *v.* to push, elbow, or bump against someone or something in a forceful or crowded way; to compete with or struggle against another person or group for space, resources, or attention
258. em_____ng country *adj.* starting to exist, mature, or become well-known
259. pr___r physics to chemistry *v.* to like, choose, or want one thing or person better than another
260. g__e stick *n.* a sticky substance used for joining things together; a bonding agent made from animal or synthetic materials
261. pr___r a window seat *v.* to like, choose, or want one thing or person better than another
262. de__e deeper *v.* to dig or excavate deeply; to investigate or research intensively; to rummage or explore in a thorough or careful manner
263. information ba_____r *n.* a fence or other obstruction that makes it hard to move or get in; any condition that makes it difficult to make progress or to achieve an objective

ANSWERS: 254. cancer, 255. chemistry, 256. experiment, 257. jostle, 258. emerging, 259. prefer, 260. glue, 261. prefer, 262. delve, 263. barrier

264. she is ma__c *n.* beliefs and actions employed to influence supernatural beings and forces; any art or performance that invokes supernatural powers
265. pathogenic ba____ia *n.* single-celled or noncellular spherical or spiral or rod-shaped organisms that exist in large numbers in the air, water, and soil, and also in living and dead creatures and plants, and are often a cause of disease
266. re____ar throughout this book *v.* to show up again or return after not being heard of or seen for a period of time
267. protein bio____le *n.* a molecule produced by a living organism, typically composed of carbon, hydrogen, oxygen, nitrogen, and other elements, plays a vital role in various biological processes such as metabolism, energy production, and genetic information transfer
268. f__m grip *adj.* resolute or unwavering in decision-making or action; strong or secure in structure, make, or composition; reliable, trustworthy, or dependable; (noun) a business or company
269. f__e with one another *n.* a small part in an electrical device or machinery that can interrupt the flow of electrical current when it is overloaded; (verb) to become plastic or fluid or liquefied from heat

ANSWERS: 264. magic, 265. bacteria, 266. reappear, 267. biomolecule, 268. firm, 269. fuse

270. buck and d_e *n.* a mature female of mammals of which the male is called a buck, such as a deer or a rabbit
271. the ma_____de of the disaster *n.* the extent, level, importance, or amount of something
272. pe_____te the fabric *v.* to spread throughout; to pass through or penetrate every part of something
273. ess_____ly correct *adv.* relating to the essential features or concepts of anything
274. tu____l disease *n.* an underground or underwater passage, typically for trains or cars
275. l__p to a conclusion *v.* to jump or spring into the air, often with the feet leaving the ground or a surface below; to move quickly or suddenly, often forward or upward
276. young people no_____ys *adv.* at the current time, in comparison to the past
277. ma_____in order *v.* to continue to uphold or sustain; to keep in a particular state or condition; to assert or declare something to be true
278. an inf_____al politician *adj.* having significant impact or power on someone or something
279. a nervous dis_____ce *n.* something that interrupts a settled and peaceful condition or that makes someone feel nervous or worried
280. a st____d of fine hair *n.* a very thin natural or synthetic thread, wire, hair, etc.; (verb) to leave or drive a vessel, fish, etc., aground or ashore
281. cast ast_____ed eyes *adj.* extremely surprised and upset

ANSWERS: 270. doe, 271. magnitude, 272. permeate, 273. essentially, 274. tunnel, 275. leap, 276. nowadays, 277. maintain, 278. influential, 279. disturbance, 280. strand, 281. astonished

282. antibiotic-resistant g__m *n.* a very tiny living that causes the disease; a piece of something such as an organism, concept, etc., capable of growing into a new one or part of one
283. det_____tic system *adj.* characterized by an assumption of cause and effect and the absence of chance or randomness, often used to describe scientific or engineering calculations
284. accounting f__m *adj.* resolute or unwavering in decision-making or action; strong or secure in structure, make, or composition; reliable, trustworthy, or dependable; (noun) a business or company
285. crossword pu___e *n.* a situation that is difficult to follow or solve; a game, problem, or toy that tests a person's ingenuity or knowledge; (verb) to cause someone to feel confused because of something difficult to understand
286. op_____ze control for cooling *v.* to make the best or most effective use of something
287. charged pa_____le *n.* a small piece of something; a word or piece of a term with grammatical function but little or no significance
288. cost ba_____r *n.* a fence or other obstruction that makes it hard to move or get in; any condition that makes it difficult to make progress or to achieve an objective

ANSWERS: 282. germ, 283. deterministic, 284. firm, 285. puzzle, 286. optimize, 287. particle, 288. barrier

289. no do__t about the news *n.* a feeling of being uncertain about something, especially about how good or accurate it is
290. ut_____e a catheter *v.* to use something for a practical purpose in an effective way
291. an int_____ary conference *adj.* involving or combining several academic disciplines or fields of study
292. the state of being we__d *adj.* extraordinary, unexpected, or difficult to explain
293. d_t blot method *n.* a very small circular mark, especially one that is printed
294. di_____te stress *v.* to disperse or scatter widely
295. in_____y stage *n.* the state or period of being a baby or very young child
296. sp_____te about the reason *v.* to form a theory or conjecture or guess about a subject without solid evidence
297. leap into f__e *n.* the condition of being well-known and discussed by a large number of people as a result of one's accomplishments, abilities, and so on
298. re___a scanner *n.* the innermost light-sensitive membrane covering the back wall of the eyeball
299. f__e blows *n.* a small part in an electrical device or machinery that can interrupt the flow of electrical current when it is overloaded; (verb) to become plastic or fluid or liquefied from heat
300. a we__d dress *adj.* extraordinary, unexpected, or difficult to explain

ANSWERS: 289. doubt, 290. utilize, 291. interdisciplinary, 292. weird, 293. dot, 294. dissipate, 295. infancy, 296. speculate, 297. fame, 298. retina, 299. fuse, 300. weird

301. not to be seen no_____ys *adv.* at the current time, in comparison to the past
302. bi_____s energy *n.* the total quantity of living matter in a given unit of environment, including plants, animals, and microorganisms
303. cognitive com_____ty *n.* the state or quality of being complicated or intricate and difficult to understand
304. nuclear ph_____s *n.* the science of matter and energy and their interactions
305. se_____te video into chapter *v.* to force, take, or pull apart; mark as different
306. chl_____ll pigment *n.* any of a group of green pigments found in photosynthetic organisms
307. many tr_____ons of dollars *n.* the number 1,000,000,000,000; a million million
308. ma_____in good health *v.* to continue to uphold or sustain; to keep in a particular state or condition; to assert or declare something to be true
309. do_____n of use *n.* a specific sphere of influence or control; a specific field of knowledge or expertise
310. harmless ba_____ia *n.* single-celled or noncellular spherical or spiral or rod-shaped organisms that exist in large numbers in the air, water, and soil, and also in living and dead creatures and plants, and are often a cause of disease
311. a ra_____m choice *adj.* made, done, or happening without method, conscious decision, or any regular pattern

ANSWERS: 301. nowadays, 302. biomass, 303. complexity, 304. physics, 305. separate, 306. chlorophyll, 307. trillion, 308. maintain, 309. domain, 310. bacteria, 311. random

312. fun_____al rights *adj.* forming an essential base or core from which everything else develops or is affected
313. self-int_____ion *n.* a preliminary explanation or remarks given before the start of a text, performance, or event; the act of bringing something new into existence or introducing something to a wider audience or new market
314. oxygenic pho_____sis *n.* the process through which plants and other organisms transform light energy into chemical energy, which is then released through cellular respiration to power the organism's activities.
315. d_e rabbit *n.* a mature female of mammals of which the male is called a buck, such as a deer or a rabbit
316. pr____n conductivity *n.* a very small particle with a positive charge equal to the negative charge of an electron that forms part of the nucleus of all atoms
317. a ca_____st in the process of hydrolysis *n.* a person or thing that causes an important event to happen or changes the current situation rapidly; (chemistry) a substance that initiates or accelerates a chemical reaction without being changed itself
318. dis_____te video content *v.* to give something to a large number of individuals, or to spread or furnish something

ANSWERS: 312. fundamental, 313. introduction, 314. photosynthesis, 315. doe, 316. proton, 317. catalyst, 318. distribute

319. va___m packing *n.* a space empty of matter; a device or tool used for cleaning or removing debris by creating suction
320. decision-making pr____s *n.* a series of actions or operations performed to achieve a particular outcome or goal; a systematic procedure or approach used to accomplish a specific task or objective; a method of treating milk to make it suitable for consumption or use in other dairy products
321. par_____se a poem into prose *v.* to restate or reword a passage in one's own words, often to clarify or simplify the original meaning
322. defense me_____sm *n.* a part of a machine, or a set of parts that performs a task; a natural or established process that occurs during a specific situation or reaction
323. the imp_____on in a crime *n.* something that is inferred or indirectly stated; the act or fact of being involved in something
324. pre-mo___n agricultural society *adj.* of or belonging to the present time or recent times
325. me_____cs equation *n.* the branch of physics that deals with the study of motion, forces, and energy; (mechanic) someone whose occupation is repairing and maintaining automobiles
326. l_b instrument *n.* a workplace for the conduct of scientific research; a laboratory

ANSWERS: 319. vacuum, 320. process, 321. paraphrase, 322. mechanism, 323. implication, 324. modern, 325. mechanics, 326. lab

327. bu____in feature *adj.* included as an integral part of something
328. complex bio_____al *adj.* relating to the chemical processes and substances that occur within living organisms
329. no__y neighbor *adj.* making a lot of sounds, especially loud or disruptive sound
330. functional spe_____ion *n.* a detailed description of the characteristics, features, or requirements of something, typically a product or system; a written statement that outlines the standards, procedures, or requirements for a project or job
331. evolutionary bi_____y *n.* the scientific study of life and the natural processes of living things
332. is_____e a compound *v.* to physically or socially separate someone or something from other people or things
333. bio_____le structure *n.* a molecule produced by a living organism, typically composed of carbon, hydrogen, oxygen, nitrogen, and other elements, plays a vital role in various biological processes such as metabolism, energy production, and genetic information transfer
334. the laws of the_____ics *n.* the area of physics that deals with heat, work, and temperature and their relation to energy, entropy, and the physical properties of matter and radiation
335. with an unc_____ble face *adj.* providing or feeling physical discomfort or slight pain

ANSWERS: 327. built-in, 328. biochemical, 329. noisy, 330. specification, 331. biology, 332. isolate, 333. biomolecule, 334. thermodynamics, 335. uncomfortable

336. amateur orn_____ist *n.* a person who studies, observes or is an expert in the scientific field of ornithology, which is the study of birds
337. engineering spe_____ion *n.* a detailed description of the characteristics, features, or requirements of something, typically a product or system; a written statement that outlines the standards, procedures, or requirements for a project or job
338. bio_____al reaction *adj.* relating to the chemical processes and substances that occur within living organisms
339. re_____on strategy *n.* a decrease in size, amount, or degree
340. pro_____tic approach *adj.* characterized by the influence of chance or probability; involving the use of statistical models or methods to estimate likelihoods or risks
341. his undying f__e *n.* the condition of being well-known and discussed by a large number of people as a result of one's accomplishments, abilities, and so on
342. connecting the d_ts *n.* a very small circular mark, especially one that is printed
343. mutation in the cry_____ome gene *n.* a type of protein found in plant and animal cells involved in regulating biological functions, particularly in response to light, which plays a crucial role in the circadian rhythm and other light-dependent processes

ANSWERS: 336. ornithologist, 337. specification, 338. biochemical, 339. reduction, 340. probabilistic, 341. fame, 342. dot, 343. cryptochrome

344. the ul____te luxury

adj. furthest or highest in degree or order

345. cou_____ive behavior

adj. contrary to what common sense would suggest

346. romantic ent_____ent

n. involvement in a complicated or difficult situation; a tangled mass

ANSWERS: 344. ultimate, 345. counterintuitive, 346. entanglement

Session 3: Fill in the Blanks

1. Early childhood experiences are very _____ for people.
adj. having significant impact or power on someone or something
2. The _____ of the fishing net was making it difficult for the whales to swim.
n. involvement in a complicated or difficult situation; a tangled mass
3. The new car had a _____ navigation system.
adj. included as an integral part of something
4. The problem seemed _____ initially, but it became a significant issue.
adj. of little value or importance
5. He performed _____ tricks with sophisticated moves.
n. beliefs and actions employed to influence supernatural beings and forces; any art or performance that invokes supernatural powers
6. He discovered unique _____ for photochemical reactions.
n. a part of a machine, or a set of parts that performs a task; a natural or established process that occurs during a specific situation or reaction
7. The athlete was able to _____ over the hurdle with ease.
v. to jump or spring into the air, often with the feet leaving the ground or a surface below; to move quickly or suddenly, often forward or upward
8. My computer has been acting _____ recently.
adj. extraordinary, unexpected, or difficult to explain

ANSWERS: 1. influential, 2. entanglement, 3. built-in, 4. trivial, 5. magic, 6. mechanisms, 7. leap, 8. weird

9. The _____ of water is called ice.

adj. hard or firm; characterized by good substantial quality

10. _____ photography is a technique that allows you to take close-up photos of small objects.

n. (computing) a set of instructions that automate a frequently used series of keystrokes or mouse actions; (photography) a lens that allows you to take close-up photographs; (economics) a large-scale economic policy or system

11. The wallpaper had a pattern of pink _____ on a white surface.

n. a very small circular mark, especially one that is printed

12. She was _____ by the news and could hardly believe it.

adj. extremely surprised and upset

13. She _____ her parents to let her go to the concert.

v. to ask for something urgently or earnestly; to appeal to someone to do something

14. Infrared cameras detect _____ in the infrared range of the electromagnetic spectrum.

n. a unit or quantum of electromagnetic energy, typically regarded as a particle that is the basic constituent of all light and other forms of electromagnetic radiation

15. In a _____ system, the outcome is uncertain and can vary based on chance.

adj. characterized by the influence of chance or probability; involving the use of statistical models or methods to estimate likelihoods or risks

ANSWERS: 9. solid-state, 10. Macro, 11. dots, 12. astonished, 13. begged, 14. photons, 15. probabilistic

16. I _____ to him that I had seen his sister at the grocery store earlier that day.
v. to speak or write about something or someone briefly
17. The second law of _____ denies the existence of a perpetual motion engine.
n. the area of physics that deals with heat, work, and temperature and their relation to energy, entropy, and the physical properties of matter and radiation
18. The _____ is about 13.8 billion years old.
n. everything that exists, especially all physical matter, including planets, stars, galaxies, and all other forms of matter and energy
19. _____ technologies have dramatically improved productivity in various industries.
adj. starting to exist, mature, or become well-known
20. Please write to _____ your reservation.
v. to support or establish the truth or certainty of something previously believed or suspected to be the case
21. Scientists recently discovered a new type of _____ protein crucial in regulating circadian rhythms.
n. a type of protein found in plant and animal cells involved in regulating biological functions, particularly in response to light, which plays a crucial role in the circadian rhythm and other light-dependent processes
22. She could finish all her work on time because of her _____ skills.
n. the ability to do more than one task at the same time; the state of doing more than one task at the same time

ANSWERS: 16. mentioned, 17. thermodynamics, 18. universe, 19. Emerging, 20. confirm, 21. cryptochrome, 22. multitasking

23. I need to _____ my car regularly to prevent any major mechanical issues.
v. to continue to uphold or sustain; to keep in a particular state or condition; to assert or declare something to be true
24. The ladder leaned against the _____ surface of the building.
adj. upright or perpendicular to a horizontal surface or line
25. Breast _____ is the most common type of cancer in women.
n. abnormal growth of cells that can invade and destroy surrounding tissues and organs; a disease characterized by the uncontrolled growth and spread of abnormal cells
26. The construction outside was creating a _____ distraction from my work.
adj. making a lot of sounds, especially loud or disruptive sound
27. His estate was _____ to his sons.
v. to give something to a large number of individuals, or to spread or furnish something
28. When a company discloses information to the market, an _____ auditor verifies them.
adj. belonging to or situated outside of someone or something
29. She _____ the money from her savings account to her checking account.
v. to move, pass, or change from one person, place, or situation to another
30. The body needs a certain amount of _____ to build and repair tissues.
n. a molecule made up of a long chain of amino acids, which is essential for the structure and function of the body's tissues

ANSWERS: 23. maintain, 24. vertical, 25. cancer, 26. noisy, 27. distributed, 28. external, 29. transferred, 30. protein

31. Their headquarters are in a _____ skyscraper.

adj. of or belonging to the present time or recent times

32. I woke up with a _____ in my neck from sleeping in an awkward position.

n. sharp pain or stiffness in the neck or back that typically results from a sudden twisting or wrenching movement

33. His poem has a very significant _____.

n. something that is inferred or indirectly stated; the act or fact of being involved in something

34. When the first molecule in the _____ receives a signal, it activates other molecules.

n. a track that constitutes or serves as a path; an approach or a way of doing something

35. The smell of baking bread _____ the kitchen.

v. to spread throughout something; to permeate

36. His _____ showed highly positive results.

n. the scientific test conducted to observe what happens and gain new knowledge

37. I love listening to the cheerful song of the _____ in my garden.

n. a small bird from the thrush family, typically having a red breast and found across Europe, Asia, and North America

38. In _____ plants use carbon dioxide to feed themselves.

n. the process through which plants and other organisms transform light energy into chemical energy, which is then released through cellular respiration to power the organism's activities.

ANSWERS: 31. modern, 32. crick, 33. implication, 34. pathway, 35. pervaded, 36. experiments, 37. robin, 38. photosynthesis,

39. We must _____ a new system to streamline our workflow and increase efficiency.

- v.* to grow or expand; to improve or refine through a process of progress and refinement, often to achieve greater sophistication or complexity; to elaborate or add detail to something that is in the process of being created

40. A rainbow is a natural _____.

- n.* something that exists and can be perceptible, especially one that is not fully understood

41. The corporation _____ dominated the entire tobacco business.

- adv.* finally, particularly after a long time or a lot of struggle, complications, and so on

42. She left the _____ door open inadvertently.

- n.* a piece of electrical equipment in which food can be stored at low temperatures so that it stays fresh

43. Gandhi had an _____ zeal for nonviolence.

- adj.* perfect or complete or to the most considerable degree possible

44. The findings of the experiment were both _____ and unexpected.

- adj.* causing a lot of interest or excitement

45. Having a _____ healthy physique is essential for a great life.

- adv.* in a way related to a person's body or appearance rather than their mind

46. The research findings _____ the theory that human activities cause global warming.

- v.* to support or strengthen the foundations of something

ANSWERS: 39. develop, 40. phenomenon, 41. eventually, 42. fridge, 43. absolute, 44. exciting, 45. physically, 46. underpin

47. The scientist conducted a study that provided _____ details about the species' behavior.

adj. clearly defined or particular to a certain thing or situation; distinct, explicit, and precise

48. The _____ in a forest can be measured by collecting and weighing all living plants within a specific area.

n. the total quantity of living matter in a given unit of environment, including plants, animals, and microorganisms

49. You should not _____ them from the community.

v. to physically or socially separate someone or something from other people or things

50. The daredevil attempted a dangerous _____ by jumping off a tall building with a parachute.

n. a feat or action that is often dangerous or difficult, designed to attract attention or admiration; something that blocks or impedes growth or development; (verb) to hinder or impede growth or development, especially in a physical or mental sense

51. The documentary featured interviews with several renowned _____ discussing the bird population decline.

n. a person who studies, observes or is an expert in the scientific field of ornithology, which is the study of birds

52. The cook _____ the leftover oxtail to make soup.

v. to use something for a practical purpose in an effective way

53. These _____ are more prevalent above a certain latitude.

n. any small creature that has six legs and a body divided into three sections

ANSWERS: 47. specific, 48. biomass, 49. isolate, 50. stunt, 51. ornithologists, 52. utilized, 53. insects

54. Seals and whales are _____ animals beloved by the people.

adj. relating to the sea and the creatures and plants that live there

55. The _____ force of the earth keeps our planet spinning.

adj. having the properties of attracting or repelling certain materials containing iron or steel

56. The _____ algorithm always produces the same result for a given input.

adj. characterized by an assumption of cause and effect and the absence of chance or randomness, often used to describe scientific or engineering calculations

57. This process improves the strength of the metal by controlling the _____ lattice structure of the metal.

adj. on a scale that can be measured in nanometres (= one billionth of a meter); on a very small scale

58. He has a short _____.

n. a small part in an electrical device or machinery that can interrupt the flow of electrical current when it is overloaded; (verb) to become plastic or fluid or liquefied from heat

59. He _____ pieces of rope out of straw.

v. to bend or turn something into a certain shape

60. The _____ for applying for a visa can be lengthy and complicated.

n. a series of actions or operations performed to achieve a particular outcome or goal; a systematic procedure or approach used to accomplish a specific task or objective; a method of treating milk to make it suitable for consumption or use in other dairy products

ANSWERS: 54. marine, 55. magnetic, 56. deterministic, 57. nanoscale, 58. fuse, 59. twisted, 60. process

61. _____ is the start, not the end, of intelligence.

n. a feeling of being uncertain about something, especially about how good or accurate it is

62. Hunters use a whistle that makes the ____ sound to lure stags.

n. a mature female of mammals of which the male is called a buck, such as a deer or a rabbit

63. The product is still in the _____ stage.

adj. relating to or based on new ideas, forms, methods, etc. that have not been tried before, usually to find out what effect they have

64. The police frantically searched for clues to the _____ killer.

n. a ghost or a spirit of a dead person; something existing only in your imagination or perception

65. _____ utilizes sunlight to create sugars.

n. any of a group of green pigments found in photosynthetic organisms

66. DNA is a complex _____ that contains the genetic information of an organism.

n. a molecule produced by a living organism, typically composed of carbon, hydrogen, oxygen, nitrogen, and other elements, plays a vital role in various biological processes such as metabolism, energy production, and genetic information transfer

67. The Prime Minister will pay a courtesy visit to the Nobel laureate's ____.

n. a workplace for the conduct of scientific research; a laboratory

68. They will _____ between various emotional states.

v. to cause to move up or away after hitting a surface; to spring back

ANSWERS: 61. Doubt, 62. doe, 63. experimental, 64. phantom, 65. Chlorophyll, 66. biomolecule, 67. lab, 68. bounce

69. The _____ object was not capable of movement or feeling.

adj. not having life or spirit; not animate

70. Our knowledge helps _____ our clients successfully.

v. to plan and direct the way that a ship, plane, etc. will travel, often by using a map

71. I was able to _____ the moment on film.

v. to catch a person or an animal and confine them in an area which they cannot escape

72. The political party _____ after much internal fighting.

v. to be or cause to be absorbed by a liquid to form a part of the solution; to close down or dismiss

73. You _____ a bill in the change machine, and the coins pop out.

v. to put something, usually a sharp object, into something; to restrict yourself to doing or using one certain thing and not change; (noun) a thin piece of wood or other material

74. Human behavior has _____ characteristics.

adj. forming an essential base or core from which everything else develops or is affected

75. He _____ that this investment would lead to success.

v. to form a theory or conjecture or guess about a subject without solid evidence

76. The _____ and the oxygen react and then form water.

n. the chemical element that is the lightest gas is colorless, odorless, tasteless, and combines with oxygen to form water

ANSWERS: 69. inanimate, 70. navigate, 71. capture, 72. dissolved, 73. stick, 74. fundamental, 75. speculated, 76. hydrogen

77. The marathon runner covered a long _____ in a short amount of time.
n. the amount of space between two points, measured in units such as miles, meters, or kilometers; the extent, scope, or range between two things, such as distance or emotional distance
78. The organizational _____ of start-ups is often flat and straightforward.
n. the way of construction of something and the arrangement of its parts, or a complex thing constructed of many parts
79. In junior high school, we had to dissect a frog in _____ class.
n. the scientific study of life and the natural processes of living things
80. Radiation from _____ has a different wavelength.
n. the light emitted by the sun; the rays of the sun
81. We can calculate the position of the _____ statistically.
n. a small piece of something; a word or piece of a term with grammatical function but little or no significance
82. The picture was _____ because it was taken with an old camera.
adj. having a soft and indistinct outline or covered with fine, soft, and hairlike fibers
83. The _____ balloons floated into the sky.
n. a colorless, odorless, tasteless, non-toxic, inert, monatomic gas, the first in the noble gas series in the periodic table
84. Many Germans _____ to South America in the mid-19th century.
v. to move from one country or region to another and settle there; to move from one place to another periodically or seasonally

ANSWERS: 77. distance, 78. structure, 79. biology, 80. sunlight, 81. particles, 82. fuzzy, 83. helium-filled, 84. migrated

85. Researchers must _____ into the intricacies of the human brain to understand mental illness.
- v.* to dig or excavate deeply; to investigate or research intensively; to rummage or explore in a thorough or careful manner
86. The birds _____ open water areas with reeds around them.
- v.* to like, choose, or want one thing or person better than another
87. The results were beyond our _____ of imagination.
- n.* a navigational instrument for finding directions with a needle that can move easily and that always points to the north; the limit or range of capability
88. The DNA molecule is shaped like a double _____.
- n.* a three-dimensional spiral shape or structure, particularly like that of a spring or a DNA molecule
89. There was a chemical _____ of the lime with the groundwater.
- n.* a response that reveals a person's feelings or attitude; (in chemistry) a process in which one or more substances are changed into others
90. Every human is responsible for taking care of the Earth's _____.
- n.* the natural world such as air, water, and land in which humans, animals, and plants live
91. Damage to the _____ may play a role in the development of glaucoma.
- n.* the innermost light-sensitive membrane covering the back wall of the eyeball
92. The MRI machine uses _____ to produce images of the body's internal organs.
- n.* an object or substance that can attract certain materials, such as iron or steel

ANSWERS: 85. delve, 86. prefer, 87. compass, 88. helix, 89. reaction, 90. environment, 91. retina, 92. magnets

93. The acupuncturist inserted _____ into specific points on my body to alleviate my pain.
- n.* a thin, pointed object typically used for sewing or medical purposes; a metal or plastic instrument used for administering injections or drawing blood
94. The _____ effects of the policy change are still being felt.
- adj.* having a wide or significant impact or influence
95. An X-ray _____ can determine the composition of the elements in a sample.
- n.* an optical instrument used for spectrographic analysis (= measurement of properties of light over a specific portion of the electromagnetic spectrum)
96. The _____ nature of quantum physics has been a source of confusion for scientists for decades.
- adj.* contrary to what common sense would suggest
97. Many countries have now agreed to a treaty banning the use of _____ weapons.
- adj.* of or relating to or constituting the nucleus of an atom; deriving destructive energy from the release of atomic energy
98. The fog _____ and the air cleared up.
- v.* to disperse or scatter widely
99. The shape of the DNA _____ is a double helix.
- n.* a group of two or more atoms held together by attractive forces known as chemical bonds
100. The technology is still in its _____ and has much room for improvement.
- n.* the state or period of being a baby or very young child

ANSWERS: 93. needles, 94. far-reaching, 95. spectroscope, 96. counterintuitive, 97. nuclear, 98. dissipated, 99. molecule, 100. infancy

101. We need to _____ the aspect of his personality from the part of his competence when making an investment decision.

v. to force, take, or pull apart; mark as different

102. This building construction causes serious _____ to residents.

n. something that interrupts a settled and peaceful condition or that makes someone feel nervous or worried

103. The global financial crisis acted as a _____ to unite the country.

n. a person or thing that causes an important event to happen or changes the current situation rapidly; (chemistry) a substance that initiates or accelerates a chemical reaction without being changed itself

104. Eyeless fish _____ in dark caves.

v. to develop gradually, or to cause the development of something or someone gradually

105. His abusive words made me _____.

adj. providing or feeling physical discomfort or slight pain

106. Faces are a good _____ of age.

n. a sign or remark that something exists, is real, or is likely to occur

107. The jungle was so dense and _____ that it was almost impossible to find a way through.

adj. not able to be passed through, entered, or understood

108. He _____ the article in his own words to avoid being accused of plagiarism.

v. to restate or reword a passage in one's own words, often to clarify or simplify the original meaning

ANSWERS: 101. separate, 102. disturbance, 103. catalyst, 104. evolved, 105. uncomfortable, 106. indication, 107. impenetrable, 108. paraphrased

109. The new washing machine is much more _____ than the old one.

adj. performing at the highest level of productivity with the least wasted effort or resources; capable of achieving maximum output with minimum wasted effort, time, or materials

110. We had a _____ time yesterday.

adj. very great in degree or extent or amount or impact; extremely good

111. Her research team made an important _____.

n. the act or process of finding information, a place, or an object, or learning about something that was previously not known

112. Management must take _____ responsibility for the accident.

adj. furthest or highest in degree or order

113. Cancer has _____ at the same site.

v. to show up again or return after not being heard of or seen for a period of time

114. Despite the scandals, his reputation remained _____.

adj. undamaged and complete

115. People can clone a sheep _____.

adv. at the current time, in comparison to the past

116. He studied the _____ of radiation.

n. the science of matter and energy and their interactions

117. To find drunk drivers, police conduct _____ tests.

adj. made, done, or happening without method, conscious decision, or any regular pattern

ANSWERS: 109. efficient, 110. tremendous, 111. discovery, 112. ultimate, 113. reappeared, 114. intact, 115. nowadays, 116. physics, 117. random

118. There are _____ differences between the two wine-producing regions.

adj. easy to see, discover or understand

119. The outermost _____ shell determines the chemical properties of an atom.

n. a tiny particle with the negative electrical charge

120. Please use the _____ to clean up the mess on the floor.

n. a space empty of matter; a device or tool used for cleaning or removing debris by creating suction

121. His _____ bedroom is always a source of frustration for his mother.

adj. disorganized and untidy

122. The _____ of the earthquake was measured at 7.8 on the Richter scale.

n. the extent, level, importance, or amount of something

123. Radiation often promotes genetic _____ in plants and animals.

n. the way in which genes of a person, plant, animal, or other organism change and produce permanent differences

124. The kidney is an _____ component of the body.

adj. of or derived from biological substance; producing plants and animals for food and other items without the use of synthetic chemicals

125. The aroma of freshly baked bread _____ the entire bakery.

v. to spread throughout; to pass through or penetrate every part of something

126. The former emperor had a particular _____ even after he abdicated.

n. the ability to affect someone's or something's character, growth, or behavior, or the effect itself

ANSWERS: 118. obvious, 119. electron, 120. vacuum, 121. messy, 122. magnitude, 123. mutations, 124. organic, 125. permeated, 126. influence

127. The rabbit _____ over the fence.

- v.* to jump lightly and quickly on one foot or both feet; to move rapidly from one place to another; to travel using an aircraft, bus, etc.

128. The _____ deadline for submitting the project is tomorrow, so we need to work efficiently to finish on time.

- adj.* resolute or unwavering in decision-making or action; strong or secure in structure, make, or composition; reliable, trustworthy, or dependable; (noun) a business or company

129. The essence of economics is to _____ the allocation of limited resources.

- v.* to make the best or most effective use of something

130. He _____ back in time to the soccer game.

- v.* to move along very quickly; (noun) the act of rising upward into the air

131. He got an electric _____ at work.

- n.* a strong feeling or physical reaction to a sudden and unexpected event or experience, especially something unpleasant

132. The _____ of his idea came from watching birds flying in flocks.

- n.* a very tiny living that causes the disease; a piece of something such as an organism, concept, etc., capable of growing into a new one or part of one

133. _____ research is essential to understanding the complex chemical reactions in living organisms.

- adj.* relating to the chemical processes and substances that occur within living organisms

134. The project's _____ outlined the goals and requirements for the team to complete.

- n.* a detailed description of the characteristics, features, or requirements of something, typically a product or system; a written statement that outlines the standards, procedures, or requirements for a project or job

ANSWERS: 127. hopped, 128. firm, 129. optimize, 130. zoomed, 131. shock, 132.

germ, 133. Biochemical, 134. specifications

135. This jigsaw _____ is challenging because there are no pictures.
- n.* a situation that is difficult to follow or solve; a game, problem, or toy that tests a person's ingenuity or knowledge; (verb) to cause someone to feel confused because of something difficult to understand
136. The company's _____ in the market was expanding to new territories.
- n.* a specific sphere of influence or control; a specific field of knowledge or expertise
137. He studied _____ in college and now works as an engineer.
- n.* the branch of physics that deals with the study of motion, forces, and energy; (mechanic) someone whose occupation is repairing and maintaining automobiles
138. The carpenter applied _____ to the cabinet joints before nailing them together.
- n.* a sticky substance used for joining things together; a bonding agent made from animal or synthetic materials
139. The solar wind is composed almost entirely of electrons and _____.
- n.* a very small particle with a positive charge equal to the negative charge of an electron that forms part of the nucleus of all atoms
140. Big techs are now eager to develop _____ computers.
- n.* the smallest amount or unit of something, especially (electromagnetic) energy
141. The story's _____ could have been better when the author included too many unrelated details.
- n.* the quality of being logical and consistent
142. The _____ surrounding the disappearance of the traveler has yet to be solved by authorities.
- n.* something difficult to understand or explain; a secret or enigmatic quality that adds to the fascination or interest of something; a genre of fiction that involves the solution of a crime or a puzzle

ANSWERS: 135. puzzle, 136. domain, 137. mechanics, 138. glue, 139. protons, 140.

quantum, 141. coherence, 142. mystery

143. I heard several melodic _____ simultaneously.

n. a very thin natural or synthetic thread, wire, hair, etc.; (verb) to leave or drive a vessel, fish, etc., aground or ashore

144. _____ a society is an organism.

adv. relating to the essential features or concepts of anything

145. She heard a _____ nearly invisible scream.

adj. not strong, clear, or vigorous; slight or weak

146. The teacher is very _____ to children's feelings.

adj. able to notice slight changes, signals, or influences; able to feel or perceive other's feelings; susceptible to the things people say or do

147. The police placed a _____ across the street to halt traffic.

n. a fence or other obstruction that makes it hard to move or get in; any condition that makes it difficult to make progress or to achieve an objective

148. Good _____ is better than a good face.

n. the condition of being well-known and discussed by a large number of people as a result of one's accomplishments, abilities, and so on

149. The firm has grown into a large _____ manufacturing.

adj. relating to or connected with chemistry;

150. He has a flair for _____.

n. the science dealing with the logic of quantities, shapes, spaces, and arrangement

ANSWERS: 143. strands, 144. Essentially, 145. faint, 146. sensitive, 147. barrier, 148. fame, 149. chemical, 150. mathematics

151. They watched the train _____ into the distance.

v. to cease to exist or be visible

152. Carbon has an _____ mass of 12.

adj. of or relating to atom (= the smallest component of an element)

153. Einstein was an outstanding and famous _____ of the 20th century.

n. a scientist who specializes in the field of physics

154. _____ weight is the sum of all the atoms.

adj. of or relating to molecules (= a group of two or more atoms held together by attractive forces known as chemical bonds)

155. _____ prevalent in hospitals are often resistant to antibiotics.

n. single-celled or noncellular spherical or spiral or rod-shaped organisms that exist in large numbers in the air, water, and soil, and also in living and dead creatures and plants, and are often a cause of disease

156. I had to _____ through the crowded concert to get to the front of the stage.

v. to push, elbow, or bump against someone or something in a forceful or crowded way; to compete with or struggle against another person or group for space, resources, or attention

157. The election was a _____ success for the Whigs.

adj. worthy of attention because unusual or special

158. A company is a distinct legal _____.

n. something that exists independently and has its own identity

ANSWERS: 151. disappear, 152. atomic, 153. physicist, 154. Molecular, 155. Bacteria, 156. jostle, 157. remarkable, 158. entity

159. The _____ in carbon emissions has been significant since the implementation of the new policy.
- n.* a decrease in size, amount, or degree
160. The bankruptcy of that company _____ markets.
- v.* to frighten or scare, and often provoke into violent action; (noun) someone unpleasantly strange or eccentric; ghost
161. One light year is nearly 6 _____ miles.
- n.* the number 1,000,000,000,000; a million million
162. They had formed a friendship _____.
- n.* a close emotional connection between two or more people; a certificate of debt that a government or corporation issues to raise money
163. She accidentally left a _____ on the newly painted wall.
- n.* a blurry or dirty mark or stain left by rubbing or smearing something; also, a bundle of material, such as sage or incense, that is burned to produce smoke for purification or ritual purposes
164. A deficiency in the _____ can lead to a medical condition.
- n.* a substance produced by a living organism that acts as a catalyst to bring about a specific biochemical reaction
165. DNA is stored in the _____ of a cell.
- n.* the central and most important part of something; (biology) a part of the cell containing DNA and RNA and responsible for growth and reproduction; (physics) the very dense central region of an atom
166. The _____ approach to solving the problem involved experts from multiple fields working together.
- adj.* involving or combining several academic disciplines or fields of study

ANSWERS: 159. reduction, 160. spooked, 161. trillion, 162. bond, 163. smudge, 164. enzyme, 165. nucleus, 166. interdisciplinary

167. We _____ our impeded progress on lack of money.

- v.* to think or say that someone or something did something wrong or is responsible for something bad

168. He is familiar with _____ and biology.

- n.* the branch of the natural sciences dealing with the composition of substances and their properties and reactions

169. The workers had to dig through solid rock to create the vehicular _____ allowing the cars to pass through the mountain.

- n.* an underground or underwater passage, typically for trains or cars

170. The _____ to the new class was informative and engaging.

- n.* a preliminary explanation or remarks given before the start of a text, performance, or event; the act of bringing something new into existence or introducing something to a wider audience or new market

171. The project's _____ made it difficult for the team to complete it on time.

- n.* the state or quality of being complicated or intricate and difficult to understand

172. The outermost electron shell of an _____ determines its chemical characteristics.

- n.* the smallest unit of ordinary matter that forms a chemical element, composed of a nucleus and one or more electrons bound to the nucleus

173. Adenine and thymine are complementary _____ in DNA.

- n.* a basic structural unit or building block of nucleic acids (DNA and RNA) consisting of a sugar molecule, a phosphate group, and a nitrogenous base (adenine, cytosine, guanine, thymine, or uracil), which combine to form the genetic code and carry information within cells

ANSWERS: 167. blamed, 168. chemistry, 169. tunnel, 170. introduction, 171. complexity, 172. atom, 173. nucleotides

ANSWERS: