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Ed Boyden: A new way to study the brain's invisible secrets | TED Talk

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

All Words

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Session 1: Word List

diaper

n. a soft, absorbent piece of material worn by babies and young children around their waist and between their legs to catch urine and feces

synonym : napkin, nappy

(1) **diaper** bag, (2) cloth **diaper**

I need to buy a pack of **diapers** for my baby before we run out.

swell

v. to become larger or more inflated; to become more intense or important

synonym : expand, increase, inflate

(1) **swell** at room temperature, (2) **swell** a population

His arm was **swelling** from the insect bite.

enormous

adj. extremely large or great

synonym : huge, giant, gigantic

(1) **enormous** amount, (2) **enormous** potential

Shakespeare's output of poetry was **enormous**.

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.

volume

n. the amount of space occupied by an object or substance; the magnitude of sound

synonym: capacity, amount, intensity

(1) **volume** of work, (2) high **volume**

This container has a **volume** of 10 cubic meters.

industrial

adj. of or relating to or resulting from industry

synonym: manufacturing, mechanical

(1) beginning of the **industrial** revolution, (2) **industrial** alcohol

Industrial design has become more focused on human nature aspect than ever before.

polymer

n. a substance composed of macromolecules (= large groups of atoms) made from many smaller and simpler molecules

(1) **polymer** fiber, (2) biological **polymer**

We are developing plant-derived **polymers** to reduce environmental impact.

brain

n. the organ inside the head that is responsible for one's movement, thought, memory, and feeling

synonym: intellect, mind, encephalon

(1) basic **brain** function, (2) permanent **brain** damage

X-rays revealed a small tumor in his **brain**.

peer

n. a person who has the same age, status, or ability

synonym: fellow, associate, counterpart

(1) **peer** group, (2) **peer** review

Among young people, **peer** pressure can be pretty influential.

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.

dimension

n. a measurable extent of a particular kind, such as width, height, or length

synonym: extent, measurement, size

(1) new **dimension**, (2) the crosswise **dimension**

Overall **dimensions** are approximately 400x200mm.

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.

yield

n. the total output of crops, profits, etc. that are produced; (verb) to produce or supply helpful something, such as a profit, an amount of food, or information

synonym: proceeds, harvest, output

(1) corn **yield**, (2) the **yield** on the bond

The company's stock gives a high **yield**.

emotion

n. a strong feeling such as love, anger, etc. deriving from one's situation, mood, or relationships with others

synonym: feeling, sentiment, passion

(1) control my **emotion**, (2) afraid to show **emotion**

Some **emotions** are common across cultures and backgrounds.

pinpoint

v. to locate or identify the exact position in space or time of something

synonym : name, direct, identify

(1) **pinpoint** the problem, (2) **pinpoint** signs of manipulation

This radar quickly **pinpoints** the position of the enemy.

disease

n. a disorder or illness that affects the body or mind, often characterized by specific symptoms or abnormal functioning of organs or systems

synonym : illness, ailment, affliction

(1) **disease** prevention, (2) **disease** control

The doctor diagnosed him with a rare **disease** that had no known cure.

Alzheimer

n. a neurodegenerative disease that causes memory loss, cognitive decline, and behavioral issues; is the most common cause of dementia in older adults

synonym : dementia, memory loss, cognitive decline

(1) **Alzheimer's** brain, (2) **Alzheimer's** risk factors

My grandmother has **Alzheimer's** disease requires special care and attention from her caregivers.

epilepsy

n. a neurological disorder characterized by recurrent seizures or convulsions, which can manifest in a variety of ways and be caused by various factors

synonym : seizures, convulsions, fits

(1) **epilepsy** seizure, (2) **epilepsy** medication

The flashing lights at the concert triggered her **epilepsy** and caused a seizure.

origin

n. the first existence or beginning of something

synonym : root, source, ancestor

(1) **origin** of information, (2) racial **origin**

There are various hypotheses concerning the **origin** of life.

neuroscience

n. the scientific study of the function, structure, and disorder of the brain and the nervous system

(1) the branch of **neuroscience**, (2) a theoretical concept in **neuroscience**

Our university is famous for its professors, who are well-versed in behavioral **neuroscience**.

invention

n. the creation of a new device or process resulting from study and experimentation; the act of inventing

synonym: creation, design, innovation

(1) the **invention** of new techniques, (2) common **invention**
Necessity is the mother of **invention**.

incredibly

adv. in a way that is very difficult to believe; exceedingly or extremely

synonym: enormously, exceptionally, extraordinarily

(1) **incredibly** cheerful character, (2) get **incredibly** insecure

Several cities are experiencing **incredibly** high unemployment rates.

complicated

adj. involving a lot of different things or parts in a way that is difficult to understand or analyze

synonym: complex, convoluted, intricate

(1) a **complicated** process, (2) become increasingly **complicated**

He did **complicated** pen-and-ink drawings in just a few days.

neuron

n. a cell that is specialized to carry information within the brain and between the brain and other parts of the body

synonym: nerve cell

(1) excite the **neurons**, (2) **neuron** cell body

Our body transfers information along each **neuron** using an electrical impulse.

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.

geometry

n. the area of pure mathematics that deals with the points, lines, curves, and surfaces

(1) Euclidean **geometry**, (2) spherical **geometry**

The mathematician pioneered fractal **geometry**.

electrical

adj. relating to electricity

(1) an **electrical** storm, (2) degree in **electrical** engineering

Actuators convert **electrical** pulses into motion.

junction

n. a point where two or more things meet or come together, particularly roads, railways, or rivers; a place or time of joining or combining

synonym: intersection, convergence, connection

(1) **junction** box, (2) **junction** point

The **junction** between these two roads is a common site of traffic accidents.

synapse

n. the fact or state of failing to finish an activity and of stopping using, making, or doing it

(1) **synapse** circuit, (2) end at a **synapse**

Animals transmit nerve impulses through **synapses**.

exchange

v. to give something and receive something else in return, often with the implication that the items being traded are of equal or comparable value; (noun) the act of giving or taking something in return for something else; a place or system where goods or services can be bought, sold, or traded

synonym: trade, swap, interchange

(1) **exchange** rate, (2) **exchange** a few friendly words

My sister and I frequently **exchange** books, as we love reading.

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.

density

n. the quality of compactness of a substance

synonym : tightness, viscosity

(1) population **density**, (2) higher pixel **density**

Do you know the **density** of the population in Hong Kong?

incredible

adj. unbelievable; enormous

synonym : unbelievable, fantastical, inconceivable

(1) **incredible** amount, (2) at **incredible** speed

Her response revealed **incredible** idiocy.

cubic

adj. having the shape of a cube or being of three dimensions; measured in units that are the third power of a linear unit

synonym : three-dimensional, boxlike, cubical

(1) **cubic** meter, (2) **cubic** structure

The package was a **cubic** shape, which made it easier to stack on the shelf.

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.

rendition

n. a performance or interpretation, often of a piece of music or artwork; a version or translation of something into another language or style; the act of surrendering someone to another country for interrogation or punishment

synonym : interpretation, performance, presentation

(1) **rendition** of judgment, (2) film **rendition**

The singer gave a beautiful **rendition** of the classic song

during the concert.

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.

mediate

v. to try to bring about an agreement or understanding between people who are in conflict

synonym: arbitrate, reconcile, intervene

(1) **mediate** allergic reaction, (2) **mediate** a negotiation

The teacher had to **mediate** a disagreement between two students over a stolen pencil.

pulse

n. the regular heartbeat as it sends blood around the body, especially when it is felt at the wrist or side of the neck; a solid regular vibration of sound, electric current, light, or other waves

synonym: beat, vibration, throb

(1) a weak **pulse**, (2) **pulse** waves

The cardiac monitor displays the intensity of your **pulse**.

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.

conduct

v. to organize and carry out a particular activity

synonym: behave, lead, carry on

(1) **conduct** a background check, (2) **conduct** research

Police will **conduct** random breath testing for drunk driving.

decision

n. the act or process of making up someone's mind about something; a choice or judgment reached after considering options

synonym : choice, determination, judgment

(1) **decision** authority, (2) a selfish **decision**

She was struggling to make a **decision** between two job offers.

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.

disorder

n. an untidy state or a lack of organization; a physical condition or illness that causes problems with how a section of the body or brain functions

synonym : chaos, disturbance, disease

(1) the files are in complete **disorder**, (2) people with bipolar **disorder**

The doctor prescribed some medicine for the mental **disorder**.

computation

n. the act or process of calculating something, especially an answer or amount, by using a machine or calculator

synonym : calculation, estimation, arithmetic

(1) parallel **computation**, (2) theory of **computation**

The researcher demonstrated the superiority of quantum **computation** in several mathematical tasks.

afflict

v. to cause pain, suffering, or distress to someone or something

synonym : trouble, distress, bother

(1) **afflict** with the plague, (2) **afflict** the economy

The disease can **afflict** both humans and animals.

patient

n. a person who is receiving medical treatment, care, or attention from a healthcare professional, such as a doctor, nurse, or therapist; a personal quality or

characteristic

synonym: client, recipient, subject

(1) **patient** in the hospital, (2) **patient** with weight loss

The doctor carefully examined the **patient's** medical history.

suffer

v. to experience pain, distress, or hardship; to undergo or endure something painful or unpleasant

synonym: endure, undergo, tolerate

(1) **suffer** a setback, (2) **suffer** bad grades

The older man **suffers** from arthritis and finds it difficult to move around.

confront

v. to face, meet or deal with a problem or difficult situation or person

synonym: engage, encounter, contend

(1) **confront** a global warming, (2) **confront** the issue

He finally decided to **confront** problems directly.

scan

v. to examine something hastily, with the eyes or with a machine, to get information

synonym: look over, scrutinize, browse

(1) **scan** the face of the man, (2) **scan** a document into PDF

She stood on the podium and **scanned** an audience.

invasive

adj. spreading very quickly, and often aggressively, and difficult to stop

synonym: aggressive, rampant, spreading

(1) **invasive** breast cancer, (2) **invasive** species

The **invasive** disease can spread quickly and potentially cause a global pandemic.

spatial

adj. of or relating space and the position, area, and size of things

synonym: dimensional, geographical

(1) **spatial** ability, (2) **spatial** distribution

He carefully determined the **spatial** relations of every piece

of the stage set.

crude

adj. being in an unrefined or natural state; (noun) the unprocessed form of oil

synonym: unrefined, native, vulgar

(1) price of **crude** oil, (2) **crude** manners

His **crude** jokes made her angry.

blob

n. a small amount or drop of a thick liquid or sticky substance

synonym: chunk, lump, hunk

(1) a big **blob** of yellow, (2) a **blob** of jelly

A **blob** of ink fell on the floor.

voxel

n. a 3D pixel (= a small but volumetric unit) in a three-dimensional space defined by x-, y-, and z-coordinates; a digital image element representing a tiny cube in a 3D picture, with its color and brightness determined by the values assigned to the voxels in its vicinity

synonym: 3d pixel, volumetric pixel

(1) **voxel** engine, (2) 3D **voxel** model

Doctors used **voxel-based** imaging to create a 3D model of the patient's brain.

resolution

n. a firm decision or determination to do or not do something; the action of solving a problem, dispute, or conflict; the quality of being resolved or determined; the clarity and sharpness of an image or display

synonym: determination, decision, settlement

(1) **resolution** of a conflict, (2) display **resolution**

He made a New Year's **resolution** to exercise more and eat healthier.

contribute

v. to give something, especially money or goods, to provide or achieve something together with other people

synonym: donate, devote, commit

- (1) **contribute** a large sum of money to the fund,
(2) **contribute** to society

Government workers cannot **contribute** to political campaigns.

conscious

adj. being aware of and able to respond to what is happening around you

synonym : aware, cognizant, deliberate

- (1) **conscious** effort, (2) **conscious** of having succeeded
He became **conscious** that he was being followed.

extreme

adj. very great in amount or degree

synonym : farthestmost, outermost, fierce

- (1) **extreme** sports, (2) **extreme** weather events
Solar gravity creates **extreme** pressures and temperatures.

microscope

n. an instrument used to see objects or substances that are too small to be seen with the naked eye

synonym : lens, magnifier, eyepiece

- (1) **microscope** slide, (2) electron **microscope**
I used an optical **microscope** to observe the small organisms in the water sample.

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.

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**.

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.

individual

n. a single person or thing, as distinct from a group

synonym : person, being, self

(1) a private **individual**, (2) **individual** freedom

As an **individual**, he had the right to make his own decisions and live his life as he saw fit.

opposition

n. the act of disagreeing or resisting; the state of strong disagreement

synonym : resistance, hostility, antagonism

(1) **opposition** campaign, (2) meet with **opposition**

The **opposition** party strongly disagreed with the government's proposed legislation.

darn

v. to mend a piece of clothing by sewing over a hole or tear with small, tight stitches

synonym : mend, repair, patch

(1) **darn** stockings, (2) **darn** hole

I have to **darn** these socks before they become unwearable.

initially

adv. at the beginning; at first

synonym : originally, primarily, firstly

(1) **initially** anticipated, (2) diagnosed **initially** as a tumor

This train departed later than **initially** scheduled.

grad

n. (informal for graduate) a student who has recently graduated or is about to graduate from a school, college, or university

synonym :

graduate, alumnus, alumni

(1) high school **grad**, (2) **grad** student

He was proud to be a **grad** of the prestigious university.

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.

decide

v. to make up someone's mind about something; to come to a conclusion or judgment after considering options

synonym: choose, determine, settle

(1) **decide** a question, (2) **decide** on a course of action

She couldn't **decide** whether to order the pizza or the pasta for dinner.

install

v. to fix furniture, a machine, or a piece of equipment into position so that it can be used; put into an office or a position

synonym: establish, inaugurate, lodge

(1) **install** a door, (2) **install** a chairperson

The new president was **installed** immediately after the national election.

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.

distinguish

v. to notice or understand the difference between two people or things

synonym : determine, differentiate, characterize

(1) **distinguish** these two things, (2) **distinguish** man from the other animals

This study **distinguished** four different ways to run a business.

dramatic

adj. very sudden, very excellent, or full of action and excitement

synonym : striking, theatrical, breathtaking

(1) make **dramatic** changes, (2) a **dramatic** rescue at sea

The statement had a **dramatic** impact on house prices.

demonstrate

v. to display something or give an exhibition to an interested audience

synonym : show, illustrate, display

(1) **demonstrate** a difference, (2) **demonstrate** mastery

How can you **demonstrate** that the earth is a sphere?

extract

n. a short passage taken from a book, piece of music, etc.; a substance obtained from something through a specific process; (verb) to obtain from something or to remove something by effort or force

synonym : excerpt, quote, distillation

(1) a brief **extract** from the book, (2) botanical **extract**

Anesthetize the gum before **extracting** the teeth.

grain

n. wheat or any other small hard seeds used as a food; a relatively small granular particle of a substance

synonym : seed, piece, cereal

(1) a **grain** of sand, (2) flour made from **grain**

Ordinary air purifiers cannot adequately remove pollen **grains**.

teaspoon

n. a small spoon used to stir or measure out small amounts of some ingredients, typically sugar, salt, or spices, in cooking or serving

(1) **teaspoon** measurement, (2) lick a **teaspoon**

You only need a **teaspoon** of salt to enhance the soup's flavor.

hundredfold

adj. a hundred times as great or as much

(1) rise nearly **hundredfold**, (2) improve **hundredfold**

The development team reported two **hundredfold** increases in performance.

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.

chain

n. a series of connected links or objects; a system or group of interconnected elements; a restraint or shackle

synonym: series, string, link

(1) **chain** reaction, (2) supply **chain**

The **chain** on my bike broke, leaving me stranded.

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.

arrange

v. to plan, prepare for, and carry out something

synonym: set up, order, organize

(1) **arrange** the meeting, (2) the list was **arranged** alphabetically

I need to **arrange** plans with him for the celebration.

dense

adj. containing a large number of people or something with little space between them

synonym: heavy, thick, idiotic

(1) nutrient- **dense** foods, (2) **dense** forests
The entire mountain is covered in **dense** rainforest.

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.

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.

absorb

v. to take in a fluid or other substance gradually
synonym: consume, soak, ingest

(1) **absorb** energy, (2) **absorb** a shock

The sponge **absorbs** water well.

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.

animation

n. the technique of photographing successive drawings or positions of puppets or models to create an illusion of movement when the film is shown as a sequence; enthusiasm and energy in the way you look or behave

synonym : motion, movement, liveliness

(1) **animation** studio, (2) **animation** film

The **animation** of the characters in the movie was so realistic, and it was as if they were there.

render

v. to bring someone or something into a particular state; to provide something such as service, help, etc.

synonym : deliver, give, provide

(1) **render** an assessment, (2) **render** the contract void

The jury must **render** a decision on this complex case.

attach

v. to fasten, join, or connect one thing to another

synonym : fix, fasten, bind

(1) **attach** firmly, (2) **attach** a file to an e-mail

He does not **attach** importance to these rumors.

anchor

n. a device, typically made of metal, that is used to moor a ship or boat in a particular place, typically by being dropped to the seabed; a central cohesive source of support and stability

synonym : mainstay, ballast, backbone

(1) **anchor** bolt, (2) **anchor** weight

The ship dropped **anchor** in the bay.

handle

v. to deal with a situation, problem, or strong emotion

synonym : control, manage, deal with

(1) **handle** a precious object, (2) **handled** the incident

We all should learn how to **handle** stress.

bind

v. to tie or fasten someone or something tightly with rope, string, etc. so that they cannot move or are held together strongly

synonym : tie, stick to, adhere

(1) **bind** the man's hands, (2) **bind** old letters into a bundle

The company's rules **bind** the employee's working hours.

exert

v. to put forth effort; to put into action; to bring into play
synonym: exert, apply, use

(1) **exert** control, (2) **exert** influence

He **exerted** himself to lift the heavyweight.

dump

v. to deposit or dispose of something, such as trash, waste, etc., carelessly or hurriedly

synonym: throw away, dispose

(1) **dump** the gravel on the road, (2) **dump** hazardous waste

The company **dumped** him after several years of service.

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.

monomer

n. a molecule capable of bonding chemically with other molecules to form a polymer, which is the basic building block of larger molecular structures

synonym: building block, molecule, polymer unit

(1) acrylamide **monomer**, (2) vinyl **monomer**

The **monomer** units are joined together to form a polymer chain.

trigger

v. to make something happen suddenly; to cause something such as a device, machine, etc. to function

synonym: activate, spark, drive

(1) **trigger** a biochemical response, (2) **trigger** inflation

The incident **triggered** a political controversy.

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.

tissue

n. an ensemble of similar cells of the animal or plant that together carry out a specific function

synonym: structure, texture, anatomy

(1) a facial **tissue**, (2) loss of muscle **tissue**

The researcher separated the nervous **tissue** for microscopic examinations.

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.

specimen

n. an individual example or sample of something, typically used to represent a larger group or category

synonym: example, sample, model

(1) **specimen** collection, (2) botanical **specimen**

The biology teacher showed the students a frog **specimen** so they could examine its anatomy.

loosen

v. to make something less tight, firm, or fixed; to free from restraint or constraint; to relax

synonym: relax, slacken, untie

(1) **loosen** grip, (2) **loosen** knot

Please **loosen** the screws on the back panel so we can access the inside of the machine.

balloon

n. a small bag made of thin rubber or other light material that can be inflated with air or gas, used as a toy or as a decoration; (verb) to become inflated

synonym: aerostat, blimp, (verb) billow out

(1) **balloon** ride, (2) **balloon** into a severe political problem

The satellite **balloon** slowly ascended into the sky.

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.

visible

adj. capable of being seen; or open to easy view

synonym: clear, observable, seeable

(1) **visible** stars, (2) **visible** by X-ray

My home is easily **visible** from the shore.

glowing

adj. highly enthusiastic; greatly praised

synonym: burning, bright, flaming

(1) **glowing** reviews, (2) **glowing** cheeks

The western sky was **glowing** pink.

dye

v. to color a textile or hair by immersing it in a colored liquid or substance

synonym: color, tint, stain

(1) **dye** a T-shirt red, (2) **dye** patterns

She **dyed** her hair purple for a change.

invisible

adj. impossible or nearly impossible to see

synonym: hidden, imperceptible, unseen

(1) an **invisible** asset, (2) **invisible** stars

The phenomenon is **invisible** at optical wavelengths.

obscure

adj. not well known to many people

synonym: esoteric, vague, unrecognized

(1) **obscure** answer, (2) **obscure** artist

This information was primarily **obscured** in the first release.

constellation

n. a group of stars that form a recognizable pattern and have a name; a group of related or similar ideas, things,

or people

synonym : asterism, array, pattern

(1) the stars of the Scorpion **constellation**, (2) northern **constellation**

Navigators still use the Little Bear **constellation** at sea.

infuse

v. to fill something with a particular quality, feeling, or influence; to imbue

synonym : instill, fill, permeate

(1) **infuse** with spirit, (2) **infuse** life with meaning

She **infused** fresh herbs into the soup for added flavor.

threefold

adj. three times as great or as many

synonym : three, triple, three times

(1) rise nearly **threefold**, (2) **threefold** increase

The price of the item was reduced **threefold** after the sale.

evenly

adv. in equal amounts or shares; in a balanced or impartial way

synonym : constantly, smoothly, equally

(1) **evenly** colored, (2) almost **evenly** divided

This product can spread the cement **evenly**.

expansion

n. the process of becoming larger or more extensive, or the result of this process

synonym : growth, enlargement, development

(1) industrial **expansion**, (2) **expansion** project

The company is undergoing an **expansion**, opening new locations in several states.

configuration

n. the arrangement or pattern of something or a group of related things

synonym : arrangement, composition, formatting

(1) **configuration** of the system, (2) engine **configuration**

The **configuration** of molecules in steel changes significantly with temperature.

circuit

n. (in electrical engineering) an electrical device that provides a path for electrical current to flow; a journey or route around a particular place or area

synonym : route, course, rotation

(1) **circuit** breaker, (2) federal **circuit** courts

An intelligent battery has a voltage monitoring **circuit**.

involve

v. to include or affect someone or something as a necessary part of something else

synonym : implicate, include, engage

(1) **involve** a lot of paperwork, (2) **involve** a high degree of risk

The investigation **involves** several government agencies and is expected to take several months.

configure

v. to set up or arrange something in a particular way or for a specific purpose

synonym : arrange, set up, organize

(1) **configure** alarm notification, (2) **configure** options

I need to **configure** my computer's settings to connect to the internet.

undergo

v. to go through something unpleasant or that involves a change

synonym : experience, suffer, endure

(1) **undergo** surgery, (2) **undergo** a decrease

The train has to **undergo** rigorous safety checks.

systematic

adj. done or acting according to a determined set of systems or plans:

synonym : periodic, frequent, organized

(1) a **systematic** reformation, (2) **systematic** botany

Science is based on the **systematic** classification of experience.

therapeutic

adj. relating to or involved in the treatment of illness or injury

synonym : healing, remedial, curative

(1) **therapeutic** massage, (2) **therapeutic** administration
Yoga is known to have **therapeutic** benefits for the mind and body.

aim

v. to try or plan to get or achieve something
synonym: aspire, direct, target

(1) **aim** at a specific target, (2) **aim** to be a nurse
We **aim** for an overseas expansion.

biomedical

adj. relating to the application of the natural sciences, especially biology, and physiology, to clinical medicine and healthcare

synonym: medical, clinical, health-related

(1) **biomedical** assay, (2) cutting-edge **biomedical**
Biomedical engineering focuses on developing new medical technologies and innovations to improve patient health outcomes.

biopsy

n. the process of removing and examining tissue from the body of the sick person to determine the existence or cause of a disease

synonym: examination, autopsy

(1) **biopsy** of bone marrow, (2) liquid **biopsy**
The doctor performed an excisional breast **biopsy**.

breast

n. either of the two round soft parts of a woman's chest which secrete milk after childbirth

synonym: bosom, chest, bust

(1) **breast** cancer, (2) the mountain's **breast**
He grilled the **breast** meat of a chicken.

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.

immune

adj. protected against a particular disease or toxin due to the presence of specific antibodies or sensitized white blood cells

synonym : resistant, unsusceptible, unaffected

(1) **immune** from criminal prosecution, (2) the cell of the **immune** system

The vaccination does not necessarily make you completely **immune**.

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.

large-scale

adj. involving many people or things and involving a lot of change or activity

synonym : big, massive, grand

(1) **large-scale** project, (2) **large-scale** agriculture

The company is planning to make a **large-scale** expansion of its factory.

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.

tick

n. a light, sharp, repetitive sound or action; a mark indicating that something is correct or has been done; any of two families of small parasitic arachnids with

barbed proboscis

synonym : sound, noise, beat

(1) **tick** of the clock, (2) **tick** fever

I always put a **tick** mark next to the items on my grocery list after buying them.

tumor

n. a mass of diseased tissue that forms when cells in the body divide and grow in an uncontrolled way

synonym : neoplasm, mass, lump

(1) **tumor** growth, (2) **tumor** at remote sites

The patient was diagnosed with a **tumor** in her lung.

wipe

v. to clean or dry something by rubbing with a piece of cloth or paper or one's hand and removing dirt, food, or liquid

synonym : clean, brush, swab

(1) **Wipe** off dirt, (2) **wipe** with water

Please **wipe** your sweat with this towel.

medicinal

adj. of or relating to the treatment or cure of disease

synonym : curative, therapeutic, healing

(1) **medicinal** chemistry, (2) traditional **medicinal**

The **medicinal** properties of this herb have been known to help with various ailments.

guesswork

n. the act or process of making an estimate or speculation based on incomplete or uncertain information; conjecture or supposition

synonym : speculation, conjecture, estimation

(1) pure **guesswork**, (2) rely on **guesswork**

Making decisions based on **guesswork** can lead to costly mistakes.

reliable

adj. worthy of being relied on; trustworthy

synonym : dependable, trustworthy, dedicated

(1) **reliable** access, (2) guarantee **reliable** delivery

Trains are **reliable**, inexpensive, and ideal for long-distance travel.

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.

gravity

n. the force that attracts a body towards the center of the earth or towards any other physical body having mass; a manner that is solemn

synonym : heaviness, attraction, weight

(1) the attraction of **gravity**, (2) preserve my **gravity**

The astronaut felt weightless in space due to the absence of **gravity**.

aerodynamics

n. the study of the motion of air, particularly its interaction with solid objects moving through it, such as aircraft or cars

synonym : aeromechanics, aeronautics, airflow

(1) **aerodynamics** research, (2) **aerodynamics** design

The **aerodynamics** of the car allowed it to glide smoothly through the air.

rocket

n. a large tube-shaped object that moves very fast by a stream of gases let out behind it, used for space travel or as a weapon

synonym : projectile, missile

(1) **rocket** attack against the enemy, (2) **rocket** fuel

The **rocket** launch platform is visible from this hill.

feat

n. a notable or impressive achievement, especially one that requires great skill or bravery

synonym : achievement, accomplishment, exploit

(1) intellectual **feat**, (2) **feat** accomplishment

It is an incredible **feat** to climb Mount Everest, the highest mountain in the world.

engineer

n. a person whose job is designing, building, or maintaining something such as machines, structures, or software

synonym : architect, creator, builder

(1) a civil **engineer**, (2) **engineer** shortage

The **engineer** will repair my telephone tomorrow morning.

necessarily

adv. in an essential manner; in such a way as could not be otherwise

synonym : inevitable, certainly, automatically

(1) not **necessarily** a problem, (2) **necessarily** true

This accident was something that happened **necessarily**.

analogous

adj. similar or equivalent in some respects, typically as a result of functioning in a similar way

synonym : similar, comparable, equivalent

(1) **analogous** fashion, (2) entirely **analogous**

The human heart is **analogous** to a pump in a plumbing system.

argue

v. to express differing opinions or points of view, often in a heated or contentious manner; to present a case or reasoning to persuade or convince others

synonym : debate, dispute, quarrel

(1) **argue** a case, (2) **argue** passionately

The couple began to **argue** over which restaurant to go to for dinner.

overcome

v. to succeed in controlling or dealing with something, such as a problem or difficulty; to defeat or overwhelm someone

synonym : beat, confound, overwhelm

(1) **overcome** opponents, (2) **overcome** all difficulties

He tried to **overcome** a bad reputation and win the election.

plague

n. any epidemic disease with a high death rate; (also called pest) a serious, sometimes fatal, infection spread by rats that causes fever and swellings on the body

synonym : epidemic, pandemic, pest

(1) catch the **plague**, (2) deadly **plague**

Our farm experienced a **plague** of locusts this year.

bioengineering

n. the application of engineering principles to the design and production of biological systems and products

synonym : biomedical engineering, genetic engineering, biotechnology

(1) **bioengineering** field, (2) **bioengineering** techniques

The **bioengineering** lab has state-of-the-art equipment and software for analyzing biological systems and designing new solutions.

endeavor

v. to make an earnest attempt or effort; to strive or work hard towards a goal or objective

synonym : attempt, strive, undertake

(1) **endeavor** to succeed, (2) **endeavor** as much as possible

We will **endeavor** to find a solution to the problem as quickly as possible.

govern

v. to legally control and direct a country, city, group of people, etc. and be responsible for introducing new laws, organizing and maintaining public services

synonym : control, rule, preside

(1) a nation's right to **govern**, (2) **govern** a public enterprise

The regulations **governing** medical malpractice claims are rigorous.

advance

v. to go or move forward; to develop in a positive way

synonym : progress, boost, come along

(1) **advance** the technology, (2) **advance** a cooperative relationship

Scientific knowledge will **advance** significantly with the power of AI.

Session 2: Spelling

- | | |
|-------------------------------|--|
| 1. control my em____n | <i>n.</i> a strong feeling such as love, anger, etc. deriving from one's situation, mood, or relationships with others |
| 2. ex__t control | <i>v.</i> to put forth effort; to put into action; to bring into play |
| 3. en____or to succeed | <i>v.</i> to make an earnest attempt or effort; to strive or work hard towards a goal or objective |
| 4. cu__c meter | <i>adj.</i> having the shape of a cube or being of three dimensions; measured in units that are the third power of a linear unit |
| 5. an____r weight | <i>n.</i> a device, typically made of metal, that is used to moor a ship or boat in a particular place, typically by being dropped to the seabed; a central cohesive source of support and stability |
| 6. en____us potential | <i>adj.</i> extremely large or great |
| 7. his conclusion was ob____s | <i>adj.</i> easy to see, discover or understand |
| 8. dis____sh these two things | <i>v.</i> to notice or understand the difference between two people or things |
| 9. co____us effort | <i>adj.</i> being aware of and able to respond to what is happening around you |
| 10. di____e control | <i>n.</i> a disorder or illness that affects the body or mind, often characterized by specific symptoms or abnormal functioning of organs or systems |

ANSWERS: 1. emotion, 2. exert, 3. endeavor, 4. cubic, 5. anchor, 6. enormous, 7. obvious, 8. distinguish, 9. conscious, 10. disease

11. co_____t research *v.* to organize and carry out a particular activity
12. ci_____t breaker *n.* (in electrical engineering) an electrical device that provides a path for electrical current to flow; a journey or route around a particular place or area
13. d__n stockings *v.* to mend a piece of clothing by sewing over a hole or tear with small, tight stitches
14. a sys_____ic reformation *adj.* done or acting according to a determined set of systems or plans:
15. at___h firmly *v.* to fasten, join, or connect one thing to another
16. d__p hazardous waste *v.* to deposit or dispose of something, such as trash, waste, etc., carelessly or hurriedly
17. lar_____le project *adj.* involving many people or things and involving a lot of change or activity
18. gl_____g reviews *adj.* highly enthusiastic; greatly praised
19. d_e a T-shirt red *v.* to color a textile or hair by immersing it in a colored liquid or substance
20. northern con_____ion *n.* a group of stars that form a recognizable pattern and have a name; a group of related or similar ideas, things, or people
21. the crosswise di_____on *n.* a measurable extent of a particular kind, such as width, height, or length
22. pa_____t with weight loss *n.* a person who is receiving medical treatment, care, or attention from a healthcare professional, such as a doctor, nurse, or therapist; a personal quality or characteristic

ANSWERS: 11. conduct, 12. circuit, 13. darn, 14. systematic, 15. attach, 16. dump, 17. large-scale, 18. glowing, 19. dye, 20. constellation, 21. dimension, 22. patient

23. th_____ld increase *adj.* three times as great or as many
24. co_____t a background check *v.* to organize and carry out a particular activity
25. re_____le access *adj.* worthy of being relied on; trustworthy
26. vi_____e stars *adj.* capable of being seen; or open to easy view
27. d__n hole *v.* to mend a piece of clothing by sewing over a hole or tear with small, tight stitches
28. bio_____ing field *n.* the application of engineering principles to the design and production of biological systems and products
29. te_____on measurement *n.* a small spoon used to stir or measure out small amounts of some ingredients, typically sugar, salt, or spices, in cooking or serving
30. ju_____on point *n.* a point where two or more things meet or come together, particularly roads, railways, or rivers; a place or time of joining or combining
31. a theoretical concept in neu_____nce *n.* the scientific study of the function, structure, and disorder of the brain and the nervous system
32. gl_____g cheeks *adj.* highly enthusiastic; greatly praised
33. tu__r at remote sites *n.* a mass of diseased tissue that forms when cells in the body divide and grow in an uncontrolled way
34. un_____o surgery *v.* to go through something unpleasant or that involves a change

ANSWERS: 23. threefold, 24. conduct, 25. reliable, 26. visible, 27. darn, 28. bioengineering, 29. teaspoon, 30. junction, 31. neuroscience, 32. glowing, 33. tumor, 34. undergo

35. co_____nt the issue *v.* to face, meet or deal with a problem or difficult situation or person
36. sw__l at room temperature *v.* to become larger or more inflated; to become more intense or important
37. 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
38. tr_____r inflation *v.* to make something happen suddenly; to cause something such as a device, machine, etc. to function
39. biological po_____r *n.* a substance composed of macromolecules (= large groups of atoms) made from many smaller and simpler molecules
40. population de_____y *n.* the quality of compactness of a substance
41. aer_____ics research *n.* the study of the motion of air, particularly its interaction with solid objects moving through it, such as aircraft or cars
42. the files are in complete di_____er *n.* an untidy state or a lack of organization; a physical condition or illness that causes problems with how a section of the body or brain functions
43. inc_____le amount *adj.* unbelievable; enormous
44. ex__t influence *v.* to put forth effort; to put into action; to bring into play

ANSWERS: 35. confront, 36. swell, 37. distance, 38. trigger, 39. polymer, 40. density, 41. aerodynamics, 42. disorder, 43. incredible, 44. exert

45. ad_____e a cooperative relationship *v.* to go or move forward; to develop in a positive way
46. Al_____er's risk factors *n.* a neurodegenerative disease that causes memory loss, cognitive decline, and behavioral issues; is the most common cause of dementia in older adults
47. pi_____nt the problem *v.* to locate or identify the exact position in space or time of something
48. 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
49. engine con_____ion *n.* the arrangement or pattern of something or a group of related things
50. in_____l a chairperson *v.* to fix furniture, a machine, or a piece of equipment into position so that it can be used; put into an office or a position
51. in_____ly anticipated *adv.* at the beginning; at first
52. p__r review *n.* a person who has the same age, status, or ability
53. high school g__d *n.* (informal for graduate) a student who has recently graduated or is about to graduate from a school, college, or university
54. a gr__n of sand *n.* wheat or any other small hard seeds used as a food; a relatively small granular particle of a substance

ANSWERS: 45. advance, 46. Alzheimer, 47. pinpoint, 48. biomolecule, 49. configuration, 50. install, 51. initially, 52. peer, 53. grad, 54. grain

55. 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
56. new di_____on *n.* a measurable extent of a particular kind, such as width, height, or length
57. com_____ty theory *n.* the state or quality of being complicated or intricate and difficult to understand
58. ba_____n ride *n.* a small bag made of thin rubber or other light material that can be inflated with air or gas, used as a toy or as a decoration; (verb) to become inflated
59. sy_____e circuit *n.* the fact or state of failing to finish an activity and of stopping using, making, or doing it
60. ar__e a case *v.* to express differing opinions or points of view, often in a heated or contentious manner; to present a case or reasoning to persuade or convince others
61. ch__n reaction *n.* a series of connected links or objects; a system or group of interconnected elements; a restraint or shackle
62. get inc_____ly insecure *adv.* in a way that is very difficult to believe; exceedingly or extremely
63. go___n a public enterprise *v.* to legally control and direct a country, city, group of people, etc. and be responsible for introducing new laws, organizing and maintaining public services
64. im___e from criminal prosecution *adj.* protected against a particular disease or toxin due to the presence of specific antibodies or sensitized white blood cells

ANSWERS: 55. nanoscale, 56. dimension, 57. complexity, 58. balloon, 59. synapse, 60. argue, 61. chain, 62. incredibly, 63. govern, 64. immune

65. a_m at a specific target *v.* to try or plan to get or achieve something
66. preserve my gr____y *n.* the force that attracts a body towards the center of the earth or towards any other physical body having mass; a manner that is solemn
67. me____e a negotiation *v.* to try to bring about an agreement or understanding between people who are in conflict
68. 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
69. ab____b energy *v.* to take in a fluid or other substance gradually
70. w__e with water *v.* to clean or dry something by rubbing with a piece of cloth or paper or one's hand and removing dirt, food, or liquid
71. botanical ex____t *n.* a short passage taken from a book, piece of music, etc.; a substance obtained from something through a specific process; (*v.*) to obtain from something or to remove something by effort or force
72. bio____al assay *adj.* relating to the application of the natural sciences, especially biology, and physiology, to clinical medicine and healthcare
73. co____re alarm notification *v.* to set up or arrange something in a particular way or for a specific purpose

ANSWERS: 65. aim, 66. gravity, 67. mediate, 68. cancer, 69. absorb, 70. wipe, 71. extract, 72. biomedical, 73. configure

74. supply ch__n *n.* a series of connected links or objects; a system or group of interconnected elements; a restraint or shackle
75. cr__e manners *adj.* being in an unrefined or natural state; (noun) the unprocessed form of oil
76. mic_____pe slide *n.* an instrument used to see objects or substances that are too small to be seen with the naked eye
77. na_____le device *adj.* on a scale that can be measured in nanometres (= one billionth of a meter); on a very small scale
78. a big b__b of yellow *n.* a small amount or drop of a thick liquid or sticky substance
79. sp_____l ability *adj.* of or relating space and the position, area, and size of things
80. a ch_____al compound *adj.* relating to or connected with chemistry;
81. an in_____le asset *adj.* impossible or nearly impossible to see
82. the in_____on of new techniques *n.* the creation of a new device or process resulting from study and experimentation; the act of inventing
83. or____n of information *n.* the first existence or beginning of something
84. opp_____on campaign *n.* the act of disagreeing or resisting; the state of strong disagreement
85. vinyl mo_____r *n.* a molecule capable of bonding chemically with other molecules to form a polymer, which is the basic building block of larger molecular structures

ANSWERS: 74. chain, 75. crude, 76. microscope, 77. nanoscale, 78. blob, 79. spatial, 80. chemical, 81. invisible, 82. invention, 83. origin, 84. opposition, 85. monomer

86. p__r group *n.* a person who has the same age, status, or ability
87. 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
88. ex_____e sports *adj.* very great in amount or degree
89. b__d the man's hands *v.* to tie or fasten someone or something tightly with rope, string, etc. so that they cannot move or are held together strongly
90. s__n the face of the man *v.* to examine something hastily, with the eyes or with a machine, to get information
91. 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
92. lo_____n grip *v.* to make something less tight, firm, or fixed; to free from restraint or constraint; to relax
93. traditional me_____al *adj.* of or relating to the treatment or cure of disease
94. ad_____e the technology *v.* to go or move forward; to develop in a positive way

ANSWERS: 86. peer, 87. biomolecule, 88. extreme, 89. bind, 90. scan, 91. mystery, 92. loosen, 93. medicinal, 94. advance

95. dem_____te mastery *v.* to display something or give an exhibition to an interested audience
96. deadly pl___e *n.* any epidemic disease with a high death rate; (also called pest) a serious, sometimes fatal, infection spread by rats that causes fever and swellings on the body
97. t__k fever *n.* a light, sharp, repetitive sound or action; a mark indicating that something is correct or has been done; any of two families of small parasitic arachnids with barbed proboscis
98. afraid to show em_____n *n.* a strong feeling such as love, anger, etc. deriving from one's situation, mood, or relationships with others
99. cloth di___r *n.* a soft, absorbent piece of material worn by babies and young children around their waist and between their legs to catch urine and feces
100. ex_____ge rate *v.* to give something and receive something else in return, often with the implication that the items being traded are of equal or comparable value; (noun) the act of giving or taking something in return for something else; a place or system where goods or services can be bought, sold, or traded
101. di_____e prevention *n.* a disorder or illness that affects the body or mind, often characterized by specific symptoms or abnormal functioning of organs or systems

ANSWERS: 95. demonstrate, 96. plague, 97. tick, 98. emotion, 99. diaper, 100. exchange, 101. disease

102. improve hun_____ld	<i>adj.</i> a hundred times as great or as much
103. corn yi__d	<i>n.</i> the total output of crops, profits, etc. that are produced; (verb) to produce or supply helpful something, such as a profit, an amount of food, or information
104. the branch of neu_____nce	<i>n.</i> the scientific study of the function, structure, and disorder of the brain and the nervous system
105. co_____us of having succeeded	<i>adj.</i> being aware of and able to respond to what is happening around you
106. exp_____nt design	<i>n.</i> the scientific test conducted to observe what happens and gain new knowledge
107. ne___n cell body	<i>n.</i> a cell that is specialized to carry information within the brain and between the brain and other parts of the body
108. en_____or as much as possible	<i>v.</i> to make an earnest attempt or effort; to strive or work hard towards a goal or objective
109. professor of ch_____ry	<i>n.</i> the branch of the natural sciences dealing with the composition of substances and their properties and reactions
110. degree in ele_____al engineering	<i>adj.</i> relating to electricity
111. sys_____ic botany	<i>adj.</i> done or acting according to a determined set of systems or plans:
112. charged pa_____le	<i>n.</i> a small piece of something; a word or piece of a term with grammatical function but little or no significance

ANSWERS: 102. hundredfold, 103. yield, 104. neuroscience, 105. conscious, 106. experiment, 107. neuron, 108. endeavor, 109. chemistry, 110. electrical, 111. systematic, 112. particle

121. a nation's right to go___n *v.* to legally control and direct a country, city, group of people, etc. and be responsible for introducing new laws, organizing and maintaining public services
122. d__p the gravel on the road *v.* to deposit or dispose of something, such as trash, waste, etc., carelessly or hurriedly
123. an ele_____al storm *adj.* relating to electricity
124. industrial ex_____on *n.* the process of becoming larger or more extensive, or the result of this process
125. ba_____n into a severe political problem *n.* a small bag made of thin rubber or other light material that can be inflated with air or gas, used as a toy or as a decoration; (verb) to become inflated
126. not nec_____ly a problem *adv.* in an essential manner; in such a way as could not be otherwise
127. 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
128. a facial ti___e *n.* an ensemble of similar cells of the animal or plant that together carry out a specific function
129. nec_____ly true *adv.* in an essential manner; in such a way as could not be otherwise
130. in_____e a high degree of risk *v.* to include or affect someone or something as a necessary part of something else

ANSWERS: 121. govern, 122. dump, 123. electrical, 124. expansion, 125. balloon, 126. necessarily, 127. discovery, 128. tissue, 129. necessarily, 130. involve

131. the list was ar____ed alphabetically *v.* to plan, prepare for, and carry out something
132. so__d ally *adj.* hard or firm; characterized by good substantial quality
133. ob____e artist *adj.* not well known to many people
134. a dr____ic rescue at sea *adj.* very sudden, very excellent, or full of action and excitement
135. evolutionary bi____y *n.* the scientific study of life and the natural processes of living things
136. 3D vo__l model *n.* a 3D pixel (= a small but volumetric unit) in a three-dimensional space defined by x-, y-, and z- coordinates; a digital image element representing a tiny cube in a 3D picture, with its color and brightness determined by the values assigned to the voxels in its vicinity
137. the cell of the im____e system *adj.* protected against a particular disease or toxin due to the presence of specific antibodies or sensitized white blood cells
138. 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
139. rise nearly hun____ld *adj.* a hundred times as great or as much
140. 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

ANSWERS: 131. arrange, 132. solid, 133. obscure, 134. dramatic, 135. biology, 136. voxel, 137. immune, 138. bacteria, 139. hundredfold, 140. distance

141. an_____on film *n.* the technique of photographing successive drawings or positions of puppets or models to create an illusion of movement when the film is shown as a sequence; enthusiasm and energy in the way you look or behave
142. the yi__d on the bond *n.* the total output of crops, profits, etc. that are produced; (verb) to produce or supply helpful something, such as a profit, an amount of food, or information
143. a private ind_____al *n.* a single person or thing, as distinct from a group
144. de___e a question *v.* to make up someone's mind about something; to come to a conclusion or judgment after considering options
145. spherical ge_____ry *n.* the area of pure mathematics that deals with the points, lines, curves, and surfaces
146. ab___b a shock *v.* to take in a fluid or other substance gradually
147. 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
148. su___r bad grades *v.* to experience pain, distress, or hardship; to undergo or endure something painful or unpleasant
149. lar_____le agriculture *adj.* involving many people or things and involving a lot of change or activity

ANSWERS: 141. animation, 142. yield, 143. individual, 144. decide, 145. geometry, 146. absorb, 147. atom, 148. suffer, 149. large-scale

150. vo___e of work *n.* the amount of space occupied by an object or substance; the magnitude of sound
151. a_m to be a nurse *v.* to try or plan to get or achieve something
152. s__n a document into PDF *v.* to examine something hastily, with the eyes or with a machine, to get information
153. g__d student *n.* (informal for graduate) a student who has recently graduated or is about to graduate from a school, college, or university
154. an___r bolt *n.* a device, typically made of metal, that is used to moor a ship or boat in a particular place, typically by being dropped to the seabed; a central cohesive source of support and stability
155. flour made from gr__n *n.* wheat or any other small hard seeds used as a food; a relatively small granular particle of a substance
156. af_____t with the plague *v.* to cause pain, suffering, or distress to someone or something
157. fun_____al rights *adj.* forming an essential base or core from which everything else develops or is affected
158. re___r the contract void *v.* to bring someone or something into a particular state; to provide something such as service, help, etc.
159. an_____on studio *n.* the technique of photographing successive drawings or positions of puppets or models to create an illusion of movement when the film is shown as a sequence; enthusiasm and energy in the way you look or behave

ANSWERS: 150. volume, 151. aim, 152. scan, 153. grad, 154. anchor, 155. grain, 156. afflict, 157. fundamental, 158. render, 159. animation

160. 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
161. 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
162. ha___e a precious object *v.* to deal with a situation, problem, or strong emotion
163. toxic ch_____als *adj.* relating to or connected with chemistry;
164. con_____te a large sum of money to the fund *v.* to give something, especially money or goods, to provide or achieve something together with other people
165. cell and molecular bi_____y *n.* the scientific study of life and the natural processes of living things
166. 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
167. vi_____e by X-ray *adj.* capable of being seen; or open to easy view
168. sp_____en collection *n.* an individual example or sample of something, typically used to represent a larger group or category
169. fun_____al education *adj.* forming an essential base or core from which everything else develops or is affected

ANSWERS: 160. cancer, 161. discovery, 162. handle, 163. chemical, 164. contribute, 165. biology, 166. develop, 167. visible, 168. specimen, 169. fundamental

170. acrylamide mo____r *n.* a molecule capable of bonding chemically with other molecules to form a polymer, which is the basic building block of larger molecular structures
171. ro____t attack against the enemy *n.* a large tube-shaped object that moves very first by a stream of gases let out behind it, used for space travel or as a weapon
172. theory of com_____on *n.* the act or process of calculating something, especially an answer or amount, by using a machine or calculator
173. botanical sp_____en *n.* an individual example or sample of something, typically used to represent a larger group or category
174. co_____re options *v.* to set up or arrange something in a particular way or for a specific purpose
175. 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
176. the_____ic massage *adj.* relating to or involved in the treatment of illness or injury
177. 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)
178. 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)

ANSWERS: 170. monomer, 171. rocket, 172. computation, 173. specimen, 174. configure, 175. reaction, 176. therapeutic, 177. molecular, 178. molecular

179. small mo____les *n.* a group of two or more atoms held together by attractive forces known as chemical bonds
180. ju____on box *n.* a point where two or more things meet or come together, particularly roads, railways, or rivers; a place or time of joining or combining
181. in____ve species *adj.* spreading very quickly, and often aggressively, and difficult to stop
182. make dr____ic changes *adj.* very sudden, very excellent, or full of action and excitement
183. Euclidean ge____ry *n.* the area of pure mathematics that deals with the points, lines, curves, and surfaces
184. phy____ly and mentally *adv.* in a way related to a person's body or appearance rather than their mind
185. po____r fiber *n.* a substance composed of macromolecules (= large groups of atoms) made from many smaller and simpler molecules
186. dem____te a difference *v.* to display something or give an exhibition to an interested audience
187. Al____er's brain *n.* a neurodegenerative disease that causes memory loss, cognitive decline, and behavioral issues; is the most common cause of dementia in older adults
188. ind____al alcohol *adj.* of or relating to or resulting from industry

ANSWERS: 179. molecule, 180. junction, 181. invasive, 182. dramatic, 183. geometry, 184. physically, 185. polymer, 186. demonstrate, 187. Alzheimer, 188. industrial

189. at inc_____le speed *adj.* unbelievable; enormous
190. basic br__n function *n.* the organ inside the head that is responsible for one's movement, thought, memory, and feeling
191. de___e on a course of action *v.* to make up someone's mind about something; to come to a conclusion or judgment after considering options
192. me_____e allergic reaction *v.* to try to bring about an agreement or understanding between people who are in conflict
193. meet with opp_____on *n.* the act of disagreeing or resisting; the state of strong disagreement
194. se_____te cream from milk *v.* to force, take, or pull apart; mark as different
195. 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
196. vo__l engine *n.* a 3D pixel (= a small but volumetric unit) in a three-dimensional space defined by x-, y-, and z- coordinates; a digital image element representing a tiny cube in a 3D picture, with its color and brightness determined by the values assigned to the voxels in its vicinity
197. rely on gu_____rk *n.* the act or process of making an estimate or speculation based on incomplete or uncertain information; conjecture or supposition

ANSWERS: 189. incredible, 190. brain, 191. decide, 192. mediate, 193. opposition, 194. separate, 195. structure, 196. voxel, 197. guesswork

198. become increasingly com_____ed *adj.* involving a lot of different things or parts in a way that is difficult to understand or analyze
199. eve_____ly succeed *adv.* finally, particularly after a long time or a lot of struggle, complications, and so on
200. ex_____e weather events *adj.* very great in amount or degree
201. t__k of the clock *n.* a light, sharp, repetitive sound or action; a mark indicating that something is correct or has been done; any of two families of small parasitic arachnids with barbed proboscis
202. display res_____on *n.* a firm decision or determination to do or not do something; the action of solving a problem, dispute, or conflict; the quality of being resolved or determined; the clarity and sharpness of an image or display
203. ro____t fuel *n.* a large tube-shaped object that moves very first by a stream of gases let out behind it, used for space travel or as a weapon
204. the attraction of gr_____y *n.* the force that attracts a body towards the center of the earth or towards any other physical body having mass; a manner that is solemn
205. so__d employment measures *adj.* hard or firm; characterized by good substantial quality
206. at____h a file to an e-mail *v.* to fasten, join, or connect one thing to another

ANSWERS: 198. complicated, 199. eventually, 200. extreme, 201. tick, 202. resolution, 203. rocket, 204. gravity, 205. solid, 206. attach

207. common in_____on *n.* the creation of a new device or process resulting from study and experimentation; the act of inventing
208. cutting-edge bio_____al *adj.* relating to the application of the natural sciences, especially biology, and physiology, to clinical medicine and healthcare
209. ov_____me opponents *v.* to succeed in controlling or dealing with something, such as a problem or difficulty; to defeat or overwhelm someone
210. dis_____sh man from the other animals *v.* to notice or understand the difference between two people or things
211. pi_____nt signs of manipulation *v.* to locate or identify the exact position in space or time of something
212. 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
213. loss of muscle ti_____e *n.* an ensemble of similar cells of the animal or plant that together carry out a specific function
214. con_____ion of the system *n.* the arrangement or pattern of something or a group of related things
215. res_____on of a conflict *n.* a firm decision or determination to do or not do something; the action of solving a problem, dispute, or conflict; the quality of being resolved or determined; the clarity and sharpness of an image or display

ANSWERS: 207. invention, 208. biomedical, 209. overcome, 210. distinguish, 211. pinpoint, 212. process, 213. tissue, 214. configuration, 215. resolution

216. eve_____ly become obsolete *adv.* finally, particularly after a long time or a lot of struggle, complications, and so on
217. ov_____me all difficulties *v.* to succeed in controlling or dealing with something, such as a problem or difficulty; to defeat or overwhelm someone
218. de__e forests *adj.* containing a large number of people or something with little space between them
219. diagnosed in_____ly as a tumor *adv.* at the beginning; at first
220. the stars of the Scorpion
con_____ion *n.* a group of stars that form a recognizable pattern and have a name; a group of related or similar ideas, things, or people
221. cognitive com_____ty *n.* the state or quality of being complicated or intricate and difficult to understand
222. excite the ne_____ns *n.* a cell that is specialized to carry information within the brain and between the brain and other parts of the body
223. racial or_____n *n.* the first existence or beginning of something
224. ob_____e answer *adj.* not well known to many people
225. sp_____l distribution *adj.* of or relating space and the position, area, and size of things
226. su_____r a setback *v.* to experience pain, distress, or hardship; to undergo or endure something painful or unpleasant

ANSWERS: 216. eventually, 217. overcome, 218. dense, 219. initially, 220. constellation, 221. complexity, 222. neuron, 223. origin, 224. obscure, 225. spatial, 226. suffer

227. ep_____sy medication *n.* a neurological disorder characterized by recurrent seizures or convulsions, which can manifest in a variety of ways and be caused by various factors
228. z__m in on a photo *v.* to move along very quickly; (noun) the act of rising upward into the air
229. electron mic_____pe *n.* an instrument used to see objects or substances that are too small to be seen with the naked eye
230. almost ev____y divided *adv.* in equal amounts or shares; in a balanced or impartial way
231. ind_____al freedom *n.* a single person or thing, as distinct from a group
232. br____t cancer *n.* either of the two round soft parts of a woman's chest which secrete milk after childbirth
233. end at a sy_____e *n.* the fact or state of failing to finish an activity and of stopping using, making, or doing it
234. guarantee re_____le delivery *adj.* worthy of being relied on; trustworthy
235. federal ci_____t courts *n.* (in electrical engineering) an electrical device that provides a path for electrical current to flow; a journey or route around a particular place or area
236. inc_____ly cheerful character *adv.* in a way that is very difficult to believe; exceedingly or extremely
237. ep_____sy seizure *n.* a neurological disorder characterized by recurrent seizures or convulsions, which can manifest in a variety of ways and be caused by various factors

ANSWERS: 227. epilepsy, 228. zoom, 229. microscope, 230. evenly, 231. individual, 232. breast, 233. synapse, 234. reliable, 235. circuit, 236. incredibly, 237. epilepsy

238. liquid bi___y *n.* the process of removing and examining tissue from the body of the sick person to determine the existence or cause of a disease
239. parallel com_____on *n.* the act or process of calculating something, especially an answer or amount, by using a machine or calculator
240. bi___y of bone marrow *n.* the process of removing and examining tissue from the body of the sick person to determine the existence or cause of a disease
241. higher pixel de_____y *n.* the quality of compactness of a substance
242. in_____le stars *adj.* impossible or nearly impossible to see
243. cu__c structure *adj.* having the shape of a cube or being of three dimensions; measured in units that are the third power of a linear unit
244. price of cr__e oil *adj.* being in an unrefined or natural state; (noun) the unprocessed form of oil
245. tu__r growth *n.* a mass of diseased tissue that forms when cells in the body divide and grow in an uncontrolled way
246. b__d old letters into a bundle *v.* to tie or fasten someone or something tightly with rope, string, etc. so that they cannot move or are held together strongly
247. a civil en_____er *n.* a person whose job is designing, building, or maintaining something such as machines, structures, or software

ANSWERS: 238. biopsy, 239. computation, 240. biopsy, 241. density, 242. invisible, 243. cubic, 244. crude, 245. tumor, 246. bind, 247. engineer

248. people with bipolar di____er *n.* an untidy state or a lack of organization; a physical condition or illness that causes problems with how a section of the body or brain functions
249. film re_____on *n.* a performance or interpretation, often of a piece of music or artwork; a version or translation of something into another language or style; the act of surrendering someone to another country for interrogation or punishment
250. pa_____le energy *n.* a small piece of something; a word or piece of a term with grammatical function but little or no significance
251. a b__b of jelly *n.* a small amount or drop of a thick liquid or sticky substance
252. di____r bag *n.* a soft, absorbent piece of material worn by babies and young children around their waist and between their legs to catch urine and feces
253. d_e patterns *v.* to color a textile or hair by immersing it in a colored liquid or substance
254. bio_____ing techniques *n.* the application of engineering principles to the design and production of biological systems and products
255. stay phy_____ly fit *adv.* in a way related to a person's body or appearance rather than their mind
256. ar__e passionately *v.* to express differing opinions or points of view, often in a heated or contentious manner; to present a case or reasoning to persuade or convince others

ANSWERS: 248. disorder, 249. rendition, 250. particle, 251. blob, 252. diaper, 253. dye, 254. bioengineering, 255. physically, 256. argue

257. 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
258. the ch_____ry of soil *n.* the branch of the natural sciences dealing with the composition of substances and their properties and reactions
259. re_____on of judgment *n.* a performance or interpretation, often of a piece of music or artwork; a version or translation of something into another language or style; the act of surrendering someone to another country for interrogation or punishment
260. mo_____le behavior *n.* a group of two or more atoms held together by attractive forces known as chemical bonds
261. 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
262. W__e off dirt *v.* to clean or dry something by rubbing with a piece of cloth or paper or one's hand and removing dirt, food, or liquid
263. the_____ic administration *adj.* relating to or involved in the treatment of illness or injury

ANSWERS: 257. atom, 258. chemistry, 259. rendition, 260. molecule, 261. process, 262. wipe, 263. therapeutic

264. un_____o a decrease *v.* to go through something unpleasant or that involves a change
265. rise nearly th_____ld *adj.* three times as great or as many
266. en_____us amount *adj.* extremely large or great
267. con_____te to society *v.* to give something, especially money or goods, to provide or achieve something together with other people
268. permanent br__n damage *n.* the organ inside the head that is responsible for one's movement, thought, memory, and feeling
269. tr_____r a biochemical response *v.* to make something happen suddenly; to cause something such as a device, machine, etc. to function
270. beginning of the ind_____al revolution *adj.* of or relating to or resulting from industry
271. intellectual f__t *n.* a notable or impressive achievement, especially one that requires great skill or bravery
272. z__m lens *v.* to move along very quickly; (noun) the act of rising upward into the air
273. sw__l a population *v.* to become larger or more inflated; to become more intense or important
274. an_____us fashion *adj.* similar or equivalent in some respects, typically as a result of functioning in a similar way
275. a brief ex_____t from the book *n.* a short passage taken from a book, piece of music, etc.; a substance obtained from something through a specific process; (verb) to obtain from something or to remove something by effort or force

ANSWERS: 264. undergo, 265. threefold, 266. enormous, 267. contribute, 268. brain, 269. trigger, 270. industrial, 271. feat, 272. zoom, 273. swell, 274. analogous, 275. extract

276. pa____t in the hospital *n.* a person who is receiving medical treatment, care, or attention from a healthcare professional, such as a doctor, nurse, or therapist; a personal quality or characteristic
277. 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
278. a selfish de____on *n.* the act or process of making up someone's mind about something; a choice or judgment reached after considering options
279. entirely an____us *adj.* similar or equivalent in some respects, typically as a result of functioning in a similar way
280. lick a te____on *n.* a small spoon used to stir or measure out small amounts of some ingredients, typically sugar, salt, or spices, in cooking or serving
281. se____te video into chapter *v.* to force, take, or pull apart; mark as different
282. ex____on project *n.* the process of becoming larger or more extensive, or the result of this process
283. pure gu____rk *n.* the act or process of making an estimate or speculation based on incomplete or uncertain information; conjecture or supposition

ANSWERS: 276. patient, 277. bacteria, 278. decision, 279. analogous, 280. teaspoon, 281. separate, 282. expansion, 283. guesswork

284. the mountain's br___t *n.* either of the two round soft parts of a woman's chest which secrete milk after childbirth
285. in_____l a door *v.* to fix furniture, a machine, or a piece of equipment into position so that it can be used; put into an office or a position
286. aer_____ics design *n.* the study of the motion of air, particularly its interaction with solid objects moving through it, such as aircraft or cars
287. in_____ve breast cancer *adj.* spreading very quickly, and often aggressively, and difficult to stop
288. series of exp_____nts *n.* the scientific test conducted to observe what happens and gain new knowledge
289. de_____on authority *n.* the act or process of making up someone's mind about something; a choice or judgment reached after considering options
290. 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
291. af_____t the economy *v.* to cause pain, suffering, or distress to someone or something
292. pu__e waves *n.* the regular heartbeat as it sends blood around the body, especially when it is felt at the wrist or side of the neck; a solid regular vibration of sound, electric current, light, or other waves

ANSWERS: 284. breast, 285. install, 286. aerodynamics, 287. invasive, 288. experiment, 289. decision, 290. develop, 291. afflict, 292. pulse

293. high vo___e *n.* the amount of space occupied by an object or substance; the magnitude of sound
294. ob____s reasons *adj.* easy to see, discover or understand
295. me_____al chemistry *adj.* of or relating to the treatment or cure of disease
296. re___r an assessment *v.* to bring someone or something into a particular state; to provide something such as service, help, etc.
297. f__t accomplishment *n.* a notable or impressive achievement, especially one that requires great skill or bravery
298. catch the pl___e *n.* any epidemic disease with a high death rate; (also called pest) a serious, sometimes fatal, infection spread by rats that causes fever and swellings on the body
299. ev___y colored *adv.* in equal amounts or shares; in a balanced or impartial way
300. ar_____e the meeting *v.* to plan, prepare for, and carry out something
301. in___e life with meaning *v.* to fill something with a particular quality, feeling, or influence; to imbue
302. 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
303. ha___ed the incident *v.* to deal with a situation, problem, or strong emotion

ANSWERS: 293. volume, 294. obvious, 295. medicinal, 296. render, 297. feat, 298. plague, 299. evenly, 300. arrange, 301. infuse, 302. structure, 303. handle

304. in___e with spirit
305. my____y novel
306. in____e a lot of paperwork
- v.* to fill something with a particular quality, feeling, or influence; to imbue
- 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
- v.* to include or affect someone or something as a necessary part of something else

ANSWERS: 304. infuse, 305. mystery, 306. involve

Session 3: Fill in the Blanks

1. Her response revealed _____ idiocy.
adj. unbelievable; enormous
2. The jury must _____ a decision on this complex case.
v. to bring someone or something into a particular state; to provide something such as service, help, etc.
3. The _____ on my bike broke, leaving me stranded.
n. a series of connected links or objects; a system or group of interconnected elements; a restraint or shackle
4. This train departed later than _____ scheduled.
adv. at the beginning; at first
5. As an _____ he had the right to make his own decisions and live his life as he saw fit.
n. a single person or thing, as distinct from a group
6. She _____ her hair purple for a change.
v. to color a textile or hair by immersing it in a colored liquid or substance
7. The company's rules _____ the employee's working hours.
v. to tie or fasten someone or something tightly with rope, string, etc. so that they cannot move or are held together strongly
8. He _____ himself to lift the heavyweight.
v. to put forth effort; to put into action; to bring into play

ANSWERS: 1. incredible, 2. render, 3. chain, 4. initially, 5. individual, 6. dyed, 7. bind, 8. exerted

9. The _____ party strongly disagreed with the government's proposed legislation.
- n.* the act of disagreeing or resisting; the state of strong disagreement
10. He does not _____ importance to these rumors.
- v.* to fasten, join, or connect one thing to another
11. It is an incredible _____ to climb Mount Everest, the highest mountain in the world.
- n.* a notable or impressive achievement, especially one that requires great skill or bravery
12. My home is easily _____ from the shore.
- adj.* capable of being seen; or open to easy view
13. The couple began to _____ over which restaurant to go to for dinner.
- v.* to express differing opinions or points of view, often in a heated or contentious manner; to present a case or reasoning to persuade or convince others
14. Please _____ the screws on the back panel so we can access the inside of the machine.
- v.* to make something less tight, firm, or fixed; to free from restraint or constraint; to relax
15. The doctor carefully examined the _____ medical history.
- n.* a person who is receiving medical treatment, care, or attention from a healthcare professional, such as a doctor, nurse, or therapist; a personal quality or characteristic
16. He was proud to be a _____ of the prestigious university.
- n.* (informal for graduate) a student who has recently graduated or is about to graduate from a school, college, or university

ANSWERS: 9. opposition, 10. attach, 11. feat, 12. visible, 13. argue, 14. loosen, 15. patient's, 16. grad

17. An intelligent battery has a voltage monitoring _____.

n. (in electrical engineering) an electrical device that provides a path for electrical current to flow; a journey or route around a particular place or area

18. _____ design has become more focused on human nature aspect than ever before.

adj. of or relating to or resulting from industry

19. The company _____ him after several years of service.

v. to deposit or dispose of something, such as trash, waste, etc., carelessly or hurriedly

20. Human behavior has _____ characteristics.

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

21. 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

22. 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

23. 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

24. The human heart is _____ to a pump in a plumbing system.

adj. similar or equivalent in some respects, typically as a result of functioning in a similar way

ANSWERS: 17. circuit, 18. Industrial, 19. dumped, 20. fundamental, 21. structure, 22. cancer, 23. reaction, 24. analogous

25. He made a New Year's _____ to exercise more and eat healthier.
- n.* a firm decision or determination to do or not do something; the action of solving a problem, dispute, or conflict; the quality of being resolved or determined; the clarity and sharpness of an image or display
26. The _____ of the characters in the movie was so realistic, and it was as if they were there.
- n.* the technique of photographing successive drawings or positions of puppets or models to create an illusion of movement when the film is shown as a sequence; enthusiasm and energy in the way you look or behave
27. 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
28. The vaccination does not necessarily make you completely _____.
- adj.* protected against a particular disease or toxin due to the presence of specific antibodies or sensitized white blood cells
29. There are various hypotheses concerning the _____ of life.
- n.* the first existence or beginning of something
30. Our farm experienced a _____ of locusts this year.
- n.* any epidemic disease with a high death rate; (also called pest) a serious, sometimes fatal, infection spread by rats that causes fever and swellings on the body
31. The new president was _____ immediately after the national election.
- v.* to fix furniture, a machine, or a piece of equipment into position so that it can be used; put into an office or a position

ANSWERS: 25. resolution, 26. animation, 27. nanoscale, 28. immune, 29. origin, 30. plague, 31. installed

32. The statement had a _____ impact on house prices.

adj. very sudden, very excellent, or full of action and excitement

33. 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

34. My sister and I frequently _____ books, as we love reading.

v. to give something and receive something else in return, often with the implication that the items being traded are of equal or comparable value; (noun) the act of giving or taking something in return for something else; a place or system where goods or services can be bought, sold, or traded

35. 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

36. The investigation _____ several government agencies and is expected to take several months.

v. to include or affect someone or something as a necessary part of something else

37. Trains are _____ inexpensive, and ideal for long-distance travel.

adj. worthy of being relied on; trustworthy

38. The sponge _____ water well.

v. to take in a fluid or other substance gradually

ANSWERS: 32. dramatic, 33. discovery, 34. exchange, 35. biomolecule, 36. involves, 37. reliable, 38. absorbs

39. This product can spread the cement _____.

adv. in equal amounts or shares; in a balanced or impartial way

40. Some _____ are common across cultures and backgrounds.

n. a strong feeling such as love, anger, etc. deriving from one's situation, mood, or relationships with others

41. This study _____ four different ways to run a business.

v. to notice or understand the difference between two people or things

42. She stood on the podium and _____ an audience.

v. to examine something hastily, with the eyes or with a machine, to get information

43. The incident _____ a political controversy.

v. to make something happen suddenly; to cause something such as a device, machine, etc. to function

44. Yoga is known to have _____ benefits for the mind and body.

adj. relating to or involved in the treatment of illness or injury

45. The price of the item was reduced _____ after the sale.

adj. three times as great or as many

46. He became _____ that he was being followed.

adj. being aware of and able to respond to what is happening around you

47. His arm was _____ from the insect bite.

v. to become larger or more inflated; to become more intense or important

ANSWERS: 39. evenly, 40. emotions, 41. distinguished, 42. scanned, 43. triggered, 44. therapeutic, 45. threefold, 46. conscious, 47. swelling

48. The patient was diagnosed with a _____ in her lung.
- n.* a mass of diseased tissue that forms when cells in the body divide and grow in an uncontrolled way
49. Making decisions based on _____ can lead to costly mistakes.
- n.* the act or process of making an estimate or speculation based on incomplete or uncertain information; conjecture or supposition
50. 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
51. The doctor performed an excisional breast _____.
- n.* the process of removing and examining tissue from the body of the sick person to determine the existence or cause of a disease
52. The _____ between these two roads is a common site of traffic accidents.
- n.* a point where two or more things meet or come together, particularly roads, railways, or rivers; a place or time of joining or combining
53. This container has a _____ of 10 cubic meters.
- n.* the amount of space occupied by an object or substance; the magnitude of sound
54. I always put a _____ mark next to the items on my grocery list after buying them.
- n.* a light, sharp, repetitive sound or action; a mark indicating that something is correct or has been done; any of two families of small parasitic arachnids with barbed proboscis

ANSWERS: 48. tumor, 49. guesswork, 50. mystery, 51. biopsy, 52. junction, 53. volume, 54. tick

55. She _____ fresh herbs into the soup for added flavor.

v. to fill something with a particular quality, feeling, or influence; to imbue

56. His _____ showed highly positive results.

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

57. This radar quickly _____ the position of the enemy.

v. to locate or identify the exact position in space or time of something

58. The teacher had to _____ a disagreement between two students over a stolen pencil.

v. to try to bring about an agreement or understanding between people who are in conflict

59. Solar gravity creates _____ pressures and temperatures.

adj. very great in amount or degree

60. 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

61. Our university is famous for its professors, who are well-versed in behavioral _____.

n. the scientific study of the function, structure, and disorder of the brain and the nervous system

62. The _____ launch platform is visible from this hill.

n. a large tube-shaped object that moves very fast by a stream of gases let out behind it, used for space travel or as a weapon

ANSWERS: 55. infused, 56. experiments, 57. pinpoints, 58. mediate, 59. extreme, 60. biology, 61. neuroscience, 62. rocket

63. The development team reported two _____ increases in performance.
adj. a hundred times as great or as much
64. The astronaut felt weightless in space due to the absence of _____.
n. the force that attracts a body towards the center of the earth or towards any other physical body having mass; a manner that is solemn
65. 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
66. 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
67. The older man _____ from arthritis and finds it difficult to move around.
v. to experience pain, distress, or hardship; to undergo or endure something painful or unpleasant
68. This accident was something that happened _____.
adv. in an essential manner; in such a way as could not be otherwise
69. I need to _____ my computer's settings to connect to the internet.
v. to set up or arrange something in a particular way or for a specific purpose
70. He finally decided to _____ problems directly.
v. to face, meet or deal with a problem or difficult situation or person
71. Animals transmit nerve impulses through _____.
n. the fact or state of failing to finish an activity and of stopping using, making, or doing it

ANSWERS: 63. hundredfold, 64. gravity, 65. molecule, 66. complexity, 67. suffers, 68. necessarily, 69. configure, 70. confront, 71. synapses

72. The _____ lab has state-of-the-art equipment and software for analyzing biological systems and designing new solutions.
- n.* the application of engineering principles to the design and production of biological systems and products
73. Please ____ your sweat with this towel.
- v.* to clean or dry something by rubbing with a piece of cloth or paper or one's hand and removing dirt, food, or liquid
74. The disease can _____ both humans and animals.
- v.* to cause pain, suffering, or distress to someone or something
75. Doctors used _____ imaging to create a 3D model of the patient's brain.
- n.* a 3D pixel (= a small but volumetric unit) in a three-dimensional space defined by x-, y-, and z- coordinates; a digital image element representing a tiny cube in a 3D picture, with its color and brightness determined by the values assigned to the voxels in its vicinity
76. The researcher separated the nervous _____ for microscopic examinations.
- n.* an ensemble of similar cells of the animal or plant that together carry out a specific function
77. She couldn't _____ whether to order the pizza or the pasta for dinner.
- v.* to make up someone's mind about something; to come to a conclusion or judgment after considering options
78. The corporation _____ dominated the entire tobacco business.
- adv.* finally, particularly after a long time or a lot of struggle, complications, and so on

ANSWERS: 72. bioengineering, 73. wipe, 74. afflict, 75. voxel-based, 76. tissue, 77. decide, 78. eventually

79. Overall _____ are approximately 400x200mm.

n. a measurable extent of a particular kind, such as width, height, or length

80. Shakespeare's output of poetry was _____.

adj. extremely large or great

81. We are developing plant-derived _____ to reduce environmental impact.

n. a substance composed of macromolecules (= large groups of atoms) made from many smaller and simpler molecules

82. The train has to _____ rigorous safety checks.

v. to go through something unpleasant or that involves a change

83. How can you _____ that the earth is a sphere?

v. to display something or give an exhibition to an interested audience

84. I need to buy a pack of _____ for my baby before we run out.

n. a soft, absorbent piece of material worn by babies and young children around their waist and between their legs to catch urine and feces

85. Government workers cannot _____ to political campaigns.

v. to give something, especially money or goods, to provide or achieve something together with other people

86. He is familiar with _____ and biology.

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

87. The package was a _____ shape, which made it easier to stack on the shelf.

adj. having the shape of a cube or being of three dimensions; measured in units that are the third power of a linear unit

ANSWERS: 79. dimensions, 80. enormous, 81. polymers, 82. undergo, 83. demonstrate, 84. diapers, 85. contribute, 86. chemistry, 87. cubic

88. Police will _____ random breath testing for drunk driving.

v. to organize and carry out a particular activity

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

adj. easy to see, discover or understand

90. Actuators convert _____ pulses into motion.

adj. relating to electricity

91. He did _____ pen-and-ink drawings in just a few days.

adj. involving a lot of different things or parts in a way that is difficult to understand or analyze

92. _____ 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

93. The researcher demonstrated the superiority of quantum _____ in several mathematical tasks.

n. the act or process of calculating something, especially an answer or amount, by using a machine or calculator

94. _____ engineering focuses on developing new medical technologies and innovations to improve patient health outcomes.

adj. relating to the application of the natural sciences, especially biology, and physiology, to clinical medicine and healthcare

95. Scientific knowledge will _____ significantly with the power of AI.

v. to go or move forward; to develop in a positive way

ANSWERS: 88. conduct, 89. obvious, 90. electrical, 91. complicated, 92. Bacteria, 93. computation, 94. Biomedical, 95. advance

96. He carefully determined the _____ relations of every piece of the stage set.
adj. of or relating space and the position, area, and size of things
97. The cardiac monitor displays the intensity of your _____.
n. the regular heartbeat as it sends blood around the body, especially when it is felt at the wrist or side of the neck; a solid regular vibration of sound, electric current, light, or other waves
98. Ordinary air purifiers cannot adequately remove pollen _____.
n. wheat or any other small hard seeds used as a food; a relatively small granular particle of a substance
99. The company is undergoing an _____ opening new locations in several states.
n. the process of becoming larger or more extensive, or the result of this process
100. The singer gave a beautiful _____ of the classic song during the concert.
n. a performance or interpretation, often of a piece of music or artwork; a version or translation of something into another language or style; the act of surrendering someone to another country for interrogation or punishment
101. A _____ of ink fell on the floor.
n. a small amount or drop of a thick liquid or sticky substance
102. The regulations _____ medical malpractice claims are rigorous.
v. to legally control and direct a country, city, group of people, etc. and be responsible for introducing new laws, organizing and maintaining public services
103. I need to _____ plans with him for the celebration.
v. to plan, prepare for, and carry out something

ANSWERS: 96. spatial, 97. pulse, 98. grains, 99. expansion, 100. rendition, 101. blob, 102. governing, 103. arrange

104. 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

105. The company's stock gives a high _____.

- n.* the total output of crops, profits, etc. that are produced; (verb) to produce or supply helpful something, such as a profit, an amount of food, or information

106. 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

107. 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

108. The flashing lights at the concert triggered her _____ and caused a seizure.

- n.* a neurological disorder characterized by recurrent seizures or convulsions, which can manifest in a variety of ways and be caused by various factors

109. The _____ properties of this herb have been known to help with various ailments.

- adj.* of or relating to the treatment or cure of disease

110. My grandmother has _____ disease requires special care and attention from her caregivers.

- n.* a neurodegenerative disease that causes memory loss, cognitive decline, and behavioral issues; is the most common cause of dementia in older adults

ANSWERS: 104. develop, 105. yield, 106. process, 107. physically, 108. epilepsy, 109. medicinal, 110. Alzheimer's

111. You only need a _____ of salt to enhance the soup's flavor.

- n.* a small spoon used to stir or measure out small amounts of some ingredients, typically sugar, salt, or spices, in cooking or serving

112. This information was primarily _____ in the first release.

- adj.* not well known to many people

113. The company is planning to make a _____ expansion of its factory.

- adj.* involving many people or things and involving a lot of change or activity

114. Anesthetize the gum before _____ the teeth.

- n.* a short passage taken from a book, piece of music, etc.; a substance obtained from something through a specific process; (verb) to obtain from something or to remove something by effort or force

115. We all should learn how to _____ stress.

- v.* to deal with a situation, problem, or strong emotion

116. The satellite _____ slowly ascended into the sky.

- n.* a small bag made of thin rubber or other light material that can be inflated with air or gas, used as a toy or as a decoration; (verb) to become inflated

117. The _____ of the car allowed it to glide smoothly through the air.

- n.* the study of the motion of air, particularly its interaction with solid objects moving through it, such as aircraft or cars

118. He tried to _____ a bad reputation and win the election.

- v.* to succeed in controlling or dealing with something, such as a problem or difficulty; to defeat or overwhelm someone

ANSWERS: 111. teaspoon, 112. obscured, 113. large-scale, 114. extracting, 115. handle, 116. balloon, 117. aerodynamics, 118. overcome

119. His _____ jokes made her angry.

adj. being in an unrefined or natural state; (noun) the unprocessed form of oil

120. Several cities are experiencing _____ high unemployment rates.

adv. in a way that is very difficult to believe; exceedingly or extremely

121. The mathematician pioneered fractal _____.

n. the area of pure mathematics that deals with the points, lines, curves, and surfaces

122. She was struggling to make a _____ between two job offers.

n. the act or process of making up someone's mind about something; a choice or judgment reached after considering options

123. Do you know the _____ of the population in Hong Kong?

n. the quality of compactness of a substance

124. 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

125. _____ 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)

126. The _____ will repair my telephone tomorrow morning.

n. a person whose job is designing, building, or maintaining something such as machines, structures, or software

ANSWERS: 119. crude, 120. incredibly, 121. geometry, 122. decision, 123. density, 124. separate, 125. Molecular, 126. engineer

127. 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

128. Navigators still use the Little Bear _____ at sea.

n. a group of stars that form a recognizable pattern and have a name; a group of related or similar ideas, things, or people

129. 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

130. Our body transfers information along each _____ using an electrical impulse.

n. a cell that is specialized to carry information within the brain and between the brain and other parts of the body

131. I used an optical _____ to observe the small organisms in the water sample.

n. an instrument used to see objects or substances that are too small to be seen with the naked eye

132. Among young people, _____ pressure can be pretty influential.

n. a person who has the same age, status, or ability

133. The western sky was _____ pink.

adj. highly enthusiastic; greatly praised

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

adj. relating to or connected with chemistry;

ANSWERS: 127. particles, 128. constellation, 129. distance, 130. neuron, 131. microscope, 132. peer, 133. glowing, 134. chemical

135. The entire mountain is covered in _____ rainforest.

adj. containing a large number of people or something with little space between them

136. The _____ disease can spread quickly and potentially cause a global pandemic.

adj. spreading very quickly, and often aggressively, and difficult to stop

137. Necessity is the mother of _____.

n. the creation of a new device or process resulting from study and experimentation; the act of inventing

138. The phenomenon is _____ at optical wavelengths.

adj. impossible or nearly impossible to see

139. The _____ of water is called ice.

adj. hard or firm; characterized by good substantial quality

140. The biology teacher showed the students a frog _____ so they could examine its anatomy.

n. an individual example or sample of something, typically used to represent a larger group or category

141. We will _____ to find a solution to the problem as quickly as possible.

v. to make an earnest attempt or effort; to strive or work hard towards a goal or objective

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

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

ANSWERS: 135. dense, 136. invasive, 137. invention, 138. invisible, 139. solid-state, 140. specimen, 141. endeavor, 142. zoomed

143. The ship dropped _____ in the bay.

- n.* a device, typically made of metal, that is used to moor a ship or boat in a particular place, typically by being dropped to the seabed; a central cohesive source of support and stability

144. The _____ of molecules in steel changes significantly with temperature.

- n.* the arrangement or pattern of something or a group of related things

145. We ___ for an overseas expansion.

- v.* to try or plan to get or achieve something

146. X-rays revealed a small tumor in his _____.

- n.* the organ inside the head that is responsible for one's movement, thought, memory, and feeling

147. The doctor diagnosed him with a rare _____ that had no known cure.

- n.* a disorder or illness that affects the body or mind, often characterized by specific symptoms or abnormal functioning of organs or systems

148. The doctor prescribed some medicine for the mental _____.

- n.* an untidy state or a lack of organization; a physical condition or illness that causes problems with how a section of the body or brain functions

149. 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

150. The _____ units are joined together to form a polymer chain.

- n.* a molecule capable of bonding chemically with other molecules to form a polymer, which is the basic building block of larger molecular structures

ANSWERS: 143. anchor, 144. configuration, 145. aim, 146. brain, 147. disease, 148. disorder, 149. atom, 150. monomer

151. He grilled the _____ meat of a chicken.

n. either of the two round soft parts of a woman's chest which secrete milk after childbirth

152. I have to _____ these socks before they become unwearable.

v. to mend a piece of clothing by sewing over a hole or tear with small, tight stitches

153. Science is based on the _____ classification of experience.

adj. done or acting according to a determined set of systems or plans:

ANSWERS: 151. breast, 152. darn, 153. systematic