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Chad Orzel: Schrödinger's cat: A thought experiment in quantum mechanics | TED Talk

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

All Words

IMPORTANT

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Session 1: Word List

physicist

n. a scientist who specializes in the field of physics
(1) talented **physicist**, (2) theoretical **physicist**
Einstein was an outstanding and famous **physicist** of the 20th century.

quantum

n. the smallest amount or unit of something, especially (electromagnetic) energy
(1) probabilistic **quantum** theory, (2) laws of **quantum** mechanics
Big techs are now eager to develop **quantum** computers.

mechanics

n. the branch of physics that deals with the study of motion, forces, and energy; (mechanic) someone whose occupation is repairing and maintaining automobiles
synonym: kinematics, dynamics
(1) **mechanics** equation, (2) **mechanics** of the game
He studied **mechanics** in college and now works as an engineer.

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.

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.

sealed

adj. closed or secured with

synonym: closed, impenetrable

(1) **sealed** orders, (2) **sealed** jar

We packed and shipped the product in **sealed** containers.

device

n. a piece of equipment, tool, or technology that serves a particular purpose or function, often mechanical or electronic

synonym: gadget, instrument, tool

(1) electronic **device**, (2) tracking **device**

I always carry a backup **device** in case my phone runs out of battery.

physics

n. the science of matter and energy and their interactions

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

He studied the **physics** of radiation.

instant

adj. happening immediately, with no delay

synonym: immediate, urgent, moment

(1) get **instant** access, (2) an **instant** reply

His pleasant face turned cold in an **instant**.

definite

adj. clearly defined or determined; having no doubt or uncertainty; precise or exact

synonym: clear, certain, precise

(1) **definite** answer, (2) **definite** plan

My boss provided me with **definite** instructions on how to complete the project.

blur

n. a faint or indistinct image or sound; something that is not clear or distinct; (verb) to become unclear; to lose clear vision

synonym : smudge, smear, fuzz

(1) **blur** image, (2) motion **blur**

The camera's focus was off, and the image was a **blur** of colors and shapes.

probable

adj. likely to happen or likely to be true

synonym : likely, possible, potential

(1) **probable** outcome, (2) **probable** cause of a fire

It seems **probable** that he has forgotten our scheduled meeting.

absurd

adj. ridiculously silly, unreasonable, or illogical

synonym : ridiculous, foolish, idiotic

(1) **absurd** storyline, (2) an **absurd** amount of money

We immediately rejected his **absurd** suggestion.

philosophy

n. the study of general and fundamental questions, such as those about existence, reason, knowledge, values, mind

synonym : doctrine, attitude, creed

(1) **philosophy** of education, (2) western **philosophy**

Ethics is a branch of **philosophy**.

disturb

v. to interrupt someone who is trying to work, sleep, etc.

synonym : agitate, bother, intrude

(1) **disturb** the peace, (2) **disturb** his sleep

Tourists frequently **disturb** the island's delicate natural balance.

abandon

v. to leave a place, thing, or person with no intention of returning; (noun) a feeling of extreme emotional intensity

synonym :

relinquish, leave behind, disregard

(1) **abandon** a friend, (2) **abandon** the practice

The castle was **abandoned** several years later.

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.

essential

adj. indispensable; fundamental

synonym: critical, crucial, basic

(1) **essential** amino acid, (2) **essential** commodities of life

Trial and error is an **essential** part of education.

phenomenon

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

synonym: marvel, wonder, splendor

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

A rainbow is a natural **phenomenon**.

superposition

n. a principle in physics that describes the combination or overlaying of two or more waves or states of matter; (of geology) the process by which layers of rock or sediment are deposited on top of one another over time

synonym: overlay, overlap

(1) quantum **superposition**, (2) **superposition** theorem

The **superposition** of waves can result in either constructive or destructive interference.

consequence

n. the outcome of a particular action or event, especially relative to an individual

synonym: result, impact, outcome

(1) unintended **consequences**, (2) the **consequence** of an argument

These economic activities had disastrous environmental

consequences.

dual

adj. having two parts, aspects, or elements

synonym : twofold, binary, double

(1) **dual** purpose, (2) **dual** nationality

This laptop has a **dual-core** processor, making it fast and efficient.

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.

wavelength

n. the distance between two points in the same phase in consecutive cycles of a wave

(1) **wavelength** of light, (2) long- **wavelength** laser

White color is made up of many different **wavelengths** of light.

extend

v. to broaden in scope, range, or area

synonym : prolong, lengthen, advance

(1) **extend** the warranty, (2) **extend** a line

Her visit will **extend** from Monday to Friday.

occupy

v. to consume all of someone's space, attention, or time

synonym : inhabit, settle, populate

(1) **occupy** his time, (2) **occupy** a position

The young prince will soon **occupy** the throne.

define

v. to state or explain precisely the nature, scope, or meaning of something

synonym : characterize, depict, express

(1) **define** a word, (2) **define** my position

To advance this discussion, we must **define** "success" rigorously.

relative

adj. considered and evaluated through comparison with something else

synonym : comparative, proximate, congeneric

(1) a remote **relative**, (2) **relative** factors

Most countries prohibit sexual activity between certain close **relatives**.

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.

solar

adj. of, from, or relating to the sun

(1) the **solar** system, (2) a **solar** eclipse

Solar panels have greatly improved not only in performance but also in durability.

detect

v. to find or recognize something, especially something difficult to see, hear, etc.

synonym : catch, observe, notice

(1) **detect** a bad event, (2) **detect** smuggling across borders

The security camera has **detected** four intruders.

electron

n. a tiny particle with the negative electrical charge

synonym : negatron

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

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

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.

slit *n.* a narrow cut or opening, often made by a sharp instrument or tool; (verb) to cut or make a long, narrow opening or incision in something, typically with a sharp instrument such as a knife or scissors
synonym : slash, incision, cut
(1) **slit** pocket, (2) **slit** the fabric
He made a small **slit** in the paper to fit it in the envelope.

barrier *n.* a fence or other obstruction that makes it hard to move or get in; any condition that makes it difficult to make progress or to achieve an objective
synonym : border, barricade, fence
(1) cost **barrier**, (2) information **barrier**
The police placed a **barrier** across the street to halt traffic.

specific *adj.* clearly defined or particular to a certain thing or situation; distinct, explicit, and precise
synonym : particular, definite, distinct
(1) **specific** instructions, (2) industry- **specific** regulations
The scientist conducted a study that provided **specific** details about the species' behavior.

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.

detection *n.* the act of discovering or identifying the presence of something
synonym : discovery, identification, recognition
(1) **detection** by the security software, (2) importance of early **detection**
This smartphone has a collision **detection** function.

trace

v. to find or discover someone or something that was lost
synonym: seek, follow, depict

(1) **trace** a telephone call, (2) **trace** back to medieval times
Let's **trace** the origins of some familiar foreign words.

characteristic

n. a typical feature or quality that can identify, tell apart, or describe something or somebody

synonym: feature, quality, attribute

(1) stripes **characteristic** of the zebra, (2) my friend's **characteristic** laugh

Bananas have their **characteristic** taste and odor.

stripe

n. a long, narrow band of a different color or texture than the surface on which it appears

synonym: line, band, streak

(1) a white **stripe**, (2) **stripe** texture

The plates have a blue **stripe** around the edge.

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.

simultaneously

adv. at the same time

synonym: concurrently, coincidentally, together

(1) **simultaneously** affected, (2) take several inputs **simultaneously**

Two students answered the teacher's question **simultaneously**.

modern

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

synonym: contemporary, stylish, current

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

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

nucleus

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

synonym : core, heart, middle

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

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

orbit

n. the path of an object around a celestial body, especially a planet, star, or moon, under the influence of gravity; (of medicine) the bony cavity in the skull that houses the eyeball and its associated structures, like muscles, nerves, and blood vessels

synonym : path, course, trajectory

(1) the **orbit** of the moon, (2) a planetary **orbit**

The rocket engine is used to put the satellite into **orbit**.

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.

bond

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

synonym : bind, adhesion, attachment

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

They had formed a friendship **bond**.

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.

vast

adj. enormous in size, number, amount, or quantity

synonym : expansive, extended, boundless

(1) **vast** majority, (2) **vast** desert

A **vast** audience viewed the broadcast.

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.

bound

v. to move forward by leaps and bounds; to form the boundary of something

synonym: jump, bounce, leap

(1) **bounded** with delight, (2) **bound** up a staircase

Canada **bounds** on the United States.

gigantic

adj. extremely large

synonym: huge, enormous, immense

(1) **gigantic** proportions, (2) **gigantic** monsters

He was so hungry from the long journey that he had a **gigantic** appetite.

determinant

n. a factor, circumstance, or condition that contributes to the shaping, influencing, or determining of a particular outcome or result

synonym: cause, factor, element

(1) environmental **determinant**, (2) a **determinant** of crop yields

One **determinant** of success is having a positive attitude and a strong work ethic.

conductor

n. someone who leads the performance of musicians or a piece of music; (in physics) an object, substance, or material that readily allows the flow of electricity, heat, etc.

synonym: director, manager

(1) **conductor** directing a symphony, (2) oxide **conductor**

Diamonds are employed as thermal **conductors** as well.

insulate

v. to protect something by interposing material that prevents heat, noise, electricity, etc.

synonym : isolate, protect, seclude

(1) **insulate** the room from sound, (2) **insulate** electricity

We had our bedroom **insulated** before winter came.

semiconductor

n. a material or substance that can conduct electricity under certain conditions but not others, often used in electronic devices

synonym : chip, wafer

(1) **semiconductor** industry, (2) **semiconductor** device

The company develops and sells **semiconductor** memory for use in computers and servers.

precise

adj. sharply exact or accurate or delimited

synonym : accurate, exact, distinct

(1) **precise** analyses, (2) estimate **precise** costs

The content is **precise** and informative for me.

silicon

n. a chemical element with the symbol Si that is a hard, brittle crystalline solid with a blue-grey metallic luster and used for the transistors and integrated circuit chips in computers

(1) **silicon** wafer, (2) crystalline **silicon**

Silicon is the second most abundant element on earth after oxygen.

combine

v. to join or merge to form a single thing or group

synonym : coalesce, cohere, blend

(1) **combine** chemically with another substance,

(2) **combine** augmented reality

Hydrogen and oxygen **combine** to form water.

transistor

n. a semiconductor device that can be used to amplify or switch electronic signals and power which is an essential component in modern electronics

synonym : semiconductor, microchip, circuit

(1) **transistor** radio, (2) **transistor** circuit

The invention of the **transistor** revolutionized the field of electronics.

chip

n. a small fragment of something broken off from the whole; a long and thin piece of potato fried in oil or fat
synonym: flake, fragment, chunk

(1) a **chip** of wood, (2) I don't care a **chip**

We can use this campaign as a bargaining **chip** in the negotiations.

imaginary

adj. existing only in someone's mind

synonym: fictional, ideal, fantastical

(1) **imaginary** number, (2) **imaginary** pregnancy

Little children tend to have **imaginary** friends.

Session 2: Spelling

1. de_____te answer *adj.* clearly defined or determined; having no doubt or uncertainty; precise or exact
2. de___e my position *v.* to state or explain precisely the nature, scope, or meaning of something
3. pre-mo___n agricultural society *adj.* of or belonging to the present time or recent times
4. v__t desert *adj.* enormous in size, number, amount, or quantity
5. b__d as a family *n.* a close emotional connection between two or more people; a certificate of debt that a government or corporation issues to raise money
6. long-wav_____th laser *n.* the distance between two points in the same phase in consecutive cycles of a wave
7. a ch_____al compound *adj.* relating to or connected with chemistry;
8. gi_____ic monsters *adj.* extremely large
9. my friend's cha_____tic laugh *n.* a typical feature or quality that can identify, tell apart, or describe something or somebody
10. di_____b the peace *v.* to interrupt someone who is trying to work, sleep, etc.
11. im_____ry pregnancy *adj.* existing only in someone's mind
12. estimate pr_____e costs *adj.* sharply exact or accurate or delimited

ANSWERS: 1. definite, 2. define, 3. modern, 4. vast, 5. bond, 6. wavelength, 7. chemical, 8. gigantic, 9. characteristic, 10. disturb, 11. imaginary, 12. precise

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| 13. the con_____ce of an argument | <i>n.</i> the outcome of a particular action or event, especially relative to an individual |
| 14. wav_____th of light | <i>n.</i> the distance between two points in the same phase in consecutive cycles of a wave |
| 15. a c__p of wood | <i>n.</i> a small fragment of something broken off from the whole; a long and thin piece of potato fried in oil or fat |
| 16. in_____te electricity | <i>v.</i> to protect something by interposing material that prevents heat, noise, electricity, etc. |
| 17. a remote re_____ve | <i>adj.</i> considered and evaluated through comparison with something else |
| 18. so__d employment measures | <i>adj.</i> hard or firm; characterized by good substantial quality |
| 19. flow of el_____ons | <i>n.</i> a tiny particle with the negative electrical charge |
| 20. d__l nationality | <i>adj.</i> having two parts, aspects, or elements |
| 21. tr__e back to medieval times | <i>v.</i> to find or discover someone or something that was lost |
| 22. small mo_____les | <i>n.</i> a group of two or more atoms held together by attractive forces known as chemical bonds |
| 23. co_____e chemically with another substance | <i>v.</i> to join or merge to form a single thing or group |
| 24. se_____te cream from milk | <i>v.</i> to force, take, or pull apart; mark as different |

ANSWERS: 13. consequence, 14. wavelength, 15. chip, 16. insulate, 17. relative, 18. solid, 19. electron, 20. dual, 21. trace, 22. molecule, 23. combine, 24. separate

25. evolutionary bi____y *n.* the scientific study of life and the natural processes of living things
26. mo____le behavior *n.* a group of two or more atoms held together by attractive forces known as chemical bonds
27. quantum sup_____ion *n.* a principle in physics that describes the combination or overlaying of two or more waves or states of matter; (of geology) the process by which layers of rock or sediment are deposited on top of one another over time
28. importance of early de_____on *n.* the act of discovering or identifying the presence of something
29. a private ind_____al *n.* a single person or thing, as distinct from a group
30. co_____e augmented reality *v.* to join or merge to form a single thing or group
31. cost ba_____r *n.* a fence or other obstruction that makes it hard to move or get in; any condition that makes it difficult to make progress or to achieve an objective
32. laws of qu_____m mechanics *n.* the smallest amount or unit of something, especially (electromagnetic) energy
33. I don't care a c__p *n.* a small fragment of something broken off from the whole; a long and thin piece of potato fried in oil or fat
34. phi_____hy of education *n.* the study of general and fundamental questions, such as those about existence, reason, knowledge, values, mind

ANSWERS: 25. biology, 26. molecule, 27. superposition, 28. detection, 29. individual, 30. combine, 31. barrier, 32. quantum, 33. chip, 34. philosophy

35. cell and molecular bi____y *n.* the scientific study of life and the natural processes of living things
36. sup_____ion theorem *n.* a principle in physics that describes the combination or overlaying of two or more waves or states of matter; (of geology) the process by which layers of rock or sediment are deposited on top of one another over time
37. s__t the fabric *n.* a narrow cut or opening, often made by a sharp instrument or tool; (verb) to cut or make a long, narrow opening or incision in something, typically with a sharp instrument such as a knife or scissors
38. es_____al amino acid *adj.* indispensable; fundamental
39. talented ph_____st *n.* a scientist who specializes in the field of physics
40. de___t a bad event *v.* to find or recognize something, especially something difficult to see, hear, etc.
41. information ba_____r *n.* a fence or other obstruction that makes it hard to move or get in; any condition that makes it difficult to make progress or to achieve an objective
42. form a nu_____s *n.* the central and most important part of something; (biology) a part of the cell containing DNA and RNA and responsible for growth and reproduction; (physics) the very dense central region of an atom

ANSWERS: 35. biology, 36. superposition, 37. slit, 38. essential, 39. physicist, 40. detect, 41. barrier, 42. nucleus

43. de___t smuggling across borders *v.* to find or recognize something, especially something difficult to see, hear, etc.
44. re____ve factors *adj.* considered and evaluated through comparison with something else
45. pr____le cause of a fire *adj.* likely to happen or likely to be true
46. oc___y his time *v.* to consume all of someone's space, attention, or time
47. se___d orders *adj.* closed or secured with
48. es____al commodities of life *adj.* indispensable; fundamental
49. sp____ic instructions *adj.* clearly defined or particular to a certain thing or situation; distinct, explicit, and precise
50. tracking de___e *n.* a piece of equipment, tool, or technology that serves a particular purpose or function, often mechanical or electronic
51. historical phe____on *n.* something that exists and can be perceptible, especially one that is not fully understood
52. get in____t access *adj.* happening immediately, with no delay
53. a planetary or__t *n.* the path of an object around a celestial body, especially a planet, star, or moon, under the influence of gravity; (of medicine) the bony cavity in the skull that houses the eyeball and its associated structures, like muscles, nerves, and blood vessels

ANSWERS: 43. detect, 44. relative, 45. probable, 46. occupy, 47. sealed, 48. essential, 49. specific, 50. device, 51. phenomenon, 52. instant, 53. orbit

54. di____b his sleep *v.* to interrupt someone who is trying to work, sleep, etc.
55. gi____ic proportions *adj.* extremely large
56. the or__t of the moon *n.* the path of an object around a celestial body, especially a planet, star, or moon, under the influence of gravity; (of medicine) the bony cavity in the skull that houses the eyeball and its associated structures, like muscles, nerves, and blood vessels
57. oxide co____or *n.* someone who leads the performance of musicians or a piece of music; (in physics) an object, substance, or material that readily allows the flow of electricity, heat, etc.
58. mo____n poetry *adj.* of or belonging to the present time or recent times
59. im____ry number *adj.* existing only in someone's mind
60. nuclear ph____s *n.* the science of matter and energy and their interactions
61. in____e a lot of paperwork *v.* to include or affect someone or something as a necessary part of something else
62. an ab____d amount of money *adj.* ridiculously silly, unreasonable, or illogical
63. an in____t reply *adj.* happening immediately, with no delay
64. b__r image *n.* a faint or indistinct image or sound; something that is not clear or distinct; (verb) to become unclear; to lose clear vision

ANSWERS: 54. disturb, 55. gigantic, 56. orbit, 57. conductor, 58. modern, 59. imaginary, 60. physics, 61. involve, 62. absurd, 63. instant, 64. blur

65. the nu____s of a team *n.* the central and most important part of something; (biology) a part of the cell containing DNA and RNA and responsible for growth and reproduction; (physics) the very dense central region of an atom
66. me_____cs of the game *n.* the branch of physics that deals with the study of motion, forces, and energy; (mechanic) someone whose occupation is repairing and maintaining automobiles
67. so__d ally *adj.* hard or firm; characterized by good substantial quality
68. a white st___e *n.* a long, narrow band of a different color or texture than the surface on which it appears
69. toxic ch_____als *adj.* relating to or connected with chemistry;
70. sem_____tor industry *n.* a material or substance that can conduct electricity under certain conditions but not others, often used in electronic devices
71. environmental det_____nt *n.* a factor, circumstance, or condition that contributes to the shaping, influencing, or determining of a particular outcome or result
72. take several inputs sim_____sly *adv.* at the same time
73. sim_____sly affected *adv.* at the same time
74. ex__d a line *v.* to broaden in scope, range, or area

ANSWERS: 65. nucleus, 66. mechanics, 67. solid, 68. stripe, 69. chemical, 70. semiconductor, 71. determinant, 72. simultaneously, 73. simultaneously, 74. extend

75. in_____e a high degree of risk *v.* to include or affect someone or something as a necessary part of something else
76. s__t pocket *n.* a narrow cut or opening, often made by a sharp instrument or tool; (verb) to cut or make a long, narrow opening or incision in something, typically with a sharp instrument such as a knife or scissors
77. a det_____nt of crop yields *n.* a factor, circumstance, or condition that contributes to the shaping, influencing, or determining of a particular outcome or result
78. series of exp_____nts *n.* the scientific test conducted to observe what happens and gain new knowledge
79. charged pa_____le *n.* a small piece of something; a word or piece of a term with grammatical function but little or no significance
80. ind_____al freedom *n.* a single person or thing, as distinct from a group
81. de_____on by the security software *n.* the act of discovering or identifying the presence of something
82. a so__r eclipse *adj.* of, from, or relating to the sun
83. tra_____or circuit *n.* a semiconductor device that can be used to amplify or switch electronic signals and power which is an essential component in modern electronics
84. in_____te the room from sound *v.* to protect something by interposing material that prevents heat, noise, electricity, etc.

ANSWERS: 75. involve, 76. slit, 77. determinant, 78. experiment, 79. particle, 80. individual, 81. detection, 82. solar, 83. transistor, 84. insulate

85. motion b__r *n.* a faint or indistinct image or sound; something that is not clear or distinct; (verb) to become unclear; to lose clear vision
86. a dr____ic rescue at sea *adj.* very sudden, very excellent, or full of action and excitement
87. industry-sp____ic regulations *adj.* clearly defined or particular to a certain thing or situation; distinct, explicit, and precise
88. ab____n a friend *v.* to leave a place, thing, or person with no intention of returning; (noun) a feeling of extreme emotional intensity
89. ab____n the practice *v.* to leave a place, thing, or person with no intention of returning; (noun) a feeling of extreme emotional intensity
90. tra____or radio *n.* a semiconductor device that can be used to amplify or switch electronic signals and power which is an essential component in modern electronics
91. stripes cha_____tic of the zebra *n.* a typical feature or quality that can identify, tell apart, or describe something or somebody
92. si____n wafer *n.* a chemical element with the symbol Si that is a hard, brittle crystalline solid with a blue-grey metallic luster and used for the transistors and integrated circuit chips in computers
93. make dr____ic changes *adj.* very sudden, very excellent, or full of action and excitement

ANSWERS: 85. blur, 86. dramatic, 87. specific, 88. abandon, 89. abandon, 90. transistor, 91. characteristic, 92. silicon, 93. dramatic

94. se___d jar *adj.* closed or secured with
95. ex___d the warranty *v.* to broaden in scope, range, or area
96. global b___d market *n.* a close emotional connection between two or more people; a certificate of debt that a government or corporation issues to raise money
97. western phi_____hy *n.* the study of general and fundamental questions, such as those about existence, reason, knowledge, values, mind
98. de___e a word *v.* to state or explain precisely the nature, scope, or meaning of something
99. exp_____nt design *n.* the scientific test conducted to observe what happens and gain new knowledge
100. 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
101. me_____cs equation *n.* the branch of physics that deals with the study of motion, forces, and energy; (mechanic) someone whose occupation is repairing and maintaining automobiles
102. crystalline si_____n *n.* a chemical element with the symbol Si that is a hard, brittle crystalline solid with a blue-grey metallic luster and used for the transistors and integrated circuit chips in computers
103. bo___d up a staircase *v.* to move forward by leaps and bounds; to form the boundary of something

ANSWERS: 94. sealed, 95. extend, 96. bond, 97. philosophy, 98. define, 99. experiment, 100. atom, 101. mechanics, 102. silicon, 103. bound

104. st___e texture *n.* a long, narrow band of a different color or texture than the surface on which it appears
105. beam of el_____ons *n.* a tiny particle with the negative electrical charge
106. pr_____e analyses *adj.* sharply exact or accurate or delimited
107. pa_____le energy *n.* a small piece of something; a word or piece of a term with grammatical function but little or no significance
108. se_____te video into chapter *v.* to force, take, or pull apart; mark as different
109. the so__r system *adj.* of, from, or relating to the sun
110. probabilistic qu_____m theory *n.* the smallest amount or unit of something, especially (electromagnetic) energy
111. v__t majority *adj.* enormous in size, number, amount, or quantity
112. co_____or directing a symphony *n.* someone who leads the performance of musicians or a piece of music; (in physics) an object, substance, or material that readily allows the flow of electricity, heat, etc.
113. 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
114. d__l purpose *adj.* having two parts, aspects, or elements
115. de_____te plan *adj.* clearly defined or determined; having no doubt or uncertainty; precise or exact

ANSWERS: 104. stripe, 105. electron, 106. precise, 107. particle, 108. separate, 109. solar, 110. quantum, 111. vast, 112. conductor, 113. atom, 114. dual, 115. definite

116. oc___y a position *v.* to consume all of someone's space, attention, or time
117. electronic de___e *n.* a piece of equipment, tool, or technology that serves a particular purpose or function, often mechanical or electronic
118. unintended con_____ces *n.* the outcome of a particular action or event, especially relative to an individual
119. laws of ph_____s *n.* the science of matter and energy and their interactions
120. theoretical ph_____st *n.* a scientist who specializes in the field of physics
121. tr__e a telephone call *v.* to find or discover someone or something that was lost
122. bo__ded with delight *v.* to move forward by leaps and bounds; to form the boundary of something
123. natural phe_____on *n.* something that exists and can be perceptible, especially one that is not fully understood
124. sem_____tor device *n.* a material or substance that can conduct electricity under certain conditions but not others, often used in electronic devices
125. pr_____le outcome *adj.* likely to happen or likely to be true
126. ab___d storyline *adj.* ridiculously silly, unreasonable, or illogical

ANSWERS: 116. occupy, 117. device, 118. consequence, 119. physics, 120. physicist, 121. trace, 122. bound, 123. phenomenon, 124. semiconductor, 125. probable, 126. absurd

Session 3: Fill in the Blanks

1. They had formed a friendship _____.
n. a close emotional connection between two or more people; a certificate of debt that a government or corporation issues to raise money
2. Her visit will _____ from Monday to Friday.
v. to broaden in scope, range, or area
3. The content is _____ and informative for me.
adj. sharply exact or accurate or delimited
4. Two students answered the teacher's question _____.
adv. at the same time
5. We can use this campaign as a bargaining _____ in the negotiations.
n. a small fragment of something broken off from the whole; a long and thin piece of potato fried in oil or fat
6. 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
7. I always carry a backup _____ in case my phone runs out of battery.
n. a piece of equipment, tool, or technology that serves a particular purpose or function, often mechanical or electronic
8. The police placed a _____ across the street to halt traffic.
n. a fence or other obstruction that makes it hard to move or get in; any condition that makes it difficult to make progress or to achieve an objective

ANSWERS: 1. bond, 2. extend, 3. precise, 4. simultaneously, 5. chip, 6. molecule, 7. device, 8. barrier

9. A _____ audience viewed the broadcast.

adj. enormous in size, number, amount, or quantity

10. The security camera has _____ four intruders.

v. to find or recognize something, especially something difficult to see, hear, etc.

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

n. a tiny particle with the negative electrical charge

12. The castle was _____ several years later.

v. to leave a place, thing, or person with no intention of returning; (noun) a feeling of extreme emotional intensity

13. A rainbow is a natural _____.

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

14. The _____ of waves can result in either constructive or destructive interference.

n. a principle in physics that describes the combination or overlaying of two or more waves or states of matter; (of geology) the process by which layers of rock or sediment are deposited on top of one another over time

15. He studied the _____ of radiation.

n. the science of matter and energy and their interactions

16. Tourists frequently _____ the island's delicate natural balance.

v. to interrupt someone who is trying to work, sleep, etc.

ANSWERS: 9. vast, 10. detected, 11. electron, 12. abandoned, 13. phenomenon, 14. superposition, 15. physics, 16. disturb

17. His pleasant face turned cold in an _____.

adj. happening immediately, with no delay

18. DNA is stored in the _____ of a cell.

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

19. This laptop has a _____ processor, making it fast and efficient.

adj. having two parts, aspects, or elements

20. The invention of the _____ revolutionized the field of electronics.

n. a semiconductor device that can be used to amplify or switch electronic signals and power which is an essential component in modern electronics

21. 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

22. It seems _____ that he has forgotten our scheduled meeting.

adj. likely to happen or likely to be true

23. His _____ showed highly positive results.

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

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

n. a scientist who specializes in the field of physics

25. My boss provided me with _____ instructions on how to complete the project.

adj. clearly defined or determined; having no doubt or uncertainty; precise or exact

ANSWERS: 17. instant, 18. nucleus, 19. dual-core, 20. transistor, 21. separate, 22. probable, 23. experiments, 24. physicist, 25. definite

26. The young prince will soon _____ the throne.
v. to consume all of someone's space, attention, or time
27. Let's _____ the origins of some familiar foreign words.
v. to find or discover someone or something that was lost
28. Big techs are now eager to develop _____ computers.
n. the smallest amount or unit of something, especially (electromagnetic) energy
29. These economic activities had disastrous environmental _____.
n. the outcome of a particular action or event, especially relative to an individual
30. We immediately rejected his _____ suggestion.
adj. ridiculously silly, unreasonable, or illogical
31. He studied _____ in college and now works as an engineer.
n. the branch of physics that deals with the study of motion, forces, and energy; (mechanic) someone whose occupation is repairing and maintaining automobiles
32. The plates have a blue _____ around the edge.
n. a long, narrow band of a different color or texture than the surface on which it appears
33. Trial and error is an _____ part of education.
adj. indispensable; fundamental
34. Their headquarters are in a _____ skyscraper.
adj. of or belonging to the present time or recent times

ANSWERS: 26. occupy, 27. trace, 28. quantum, 29. consequences, 30. absurd, 31. mechanics, 32. stripe, 33. essential, 34. modern

35. Bananas have their _____ taste and odor.
n. a typical feature or quality that can identify, tell apart, or describe something or somebody
36. _____ is the second most abundant element on earth after oxygen.
n. a chemical element with the symbol Si that is a hard, brittle crystalline solid with a blue-grey metallic luster and used for the transistors and integrated circuit chips in computers
37. Ethics is a branch of _____.
n. the study of general and fundamental questions, such as those about existence, reason, knowledge, values, mind
38. Canada _____ on the United States.
v. to move forward by leaps and bounds; to form the boundary of something
39. Little children tend to have _____ friends.
adj. existing only in someone's mind
40. The camera's focus was off, and the image was a _____ of colors and shapes.
n. a faint or indistinct image or sound; something that is not clear or distinct; (verb) to become unclear; to lose clear vision
41. 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
42. He made a small _____ in the paper to fit it in the envelope.
n. a narrow cut or opening, often made by a sharp instrument or tool; (verb) to cut or make a long, narrow opening or incision in something, typically with a sharp instrument such as a knife or scissors

ANSWERS: 35. characteristic, 36. Silicon, 37. philosophy, 38. bounds, 39. imaginary, 40. blur, 41. particles, 42. slit

43. 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
44. The firm has grown into a large _____ manufacturing.
adj. relating to or connected with chemistry;
45. The rocket engine is used to put the satellite into _____.
n. the path of an object around a celestial body, especially a planet, star, or moon, under the influence of gravity; (of medicine) the bony cavity in the skull that houses the eyeball and its associated structures, like muscles, nerves, and blood vessels
46. White color is made up of many different _____ of light.
n. the distance between two points in the same phase in consecutive cycles of a wave
47. The statement had a _____ impact on house prices.
adj. very sudden, very excellent, or full of action and excitement
48. He was so hungry from the long journey that he had a _____ appetite.
adj. extremely large
49. Hydrogen and oxygen _____ to form water.
v. to join or merge to form a single thing or group
50. 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

ANSWERS: 43. biology, 44. chemical, 45. orbit, 46. wavelengths, 47. dramatic, 48. gigantic, 49. combine, 50. individual,

51. The _____ of water is called ice.

adj. hard or firm; characterized by good substantial quality

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

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

53. Diamonds are employed as thermal _____ as well.

n. someone who leads the performance of musicians or a piece of music; (in physics) an object, substance, or material that readily allows the flow of electricity, heat, etc.

54. The company develops and sells _____ memory for use in computers and servers.

n. a material or substance that can conduct electricity under certain conditions but not others, often used in electronic devices

55. Most countries prohibit sexual activity between certain close _____.

adj. considered and evaluated through comparison with something else

56. 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

57. We packed and shipped the product in _____ containers.

adj. closed or secured with

58. 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

ANSWERS: 51. solid-state, 52. specific, 53. conductors, 54. semiconductor, 55. relatives, 56. atom, 57. sealed, 58. involves

59. To advance this discussion, we must _____ "success" rigorously.
- v.* to state or explain precisely the nature, scope, or meaning of something
60. This smartphone has a collision _____ function.
- n.* the act of discovering or identifying the presence of something
61. _____ panels have greatly improved not only in performance but also in durability.
- adj.* of, from, or relating to the sun
62. One _____ of success is having a positive attitude and a strong work ethic.
- n.* a factor, circumstance, or condition that contributes to the shaping, influencing, or determining of a particular outcome or result
63. We had our bedroom _____ before winter came.
- v.* to protect something by interposing material that prevents heat, noise, electricity, etc.

ANSWERS: 59. define, 60. detection, 61. Solar, 62. determinant, 63. insulated