

#1

ID: afec1a70

While researching a topic, a student has taken the following notes:

- As engineered structures, many bird nests are uniquely flexible yet cohesive.
- A research team led by Yashraj Bhosale wanted to better understand the mechanics behind these structural properties.
- Bhosale's team used laboratory models that simulated the arrangement of flexible sticks into nest-like structures.
- The researchers analyzed the points where sticks touched one another.
- When pressure was applied to the model nests, the number of contact points between the sticks increased, making the structures stiffer.

The student wants to present the primary aim of the research study. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Bhosale's team wanted to better understand the mechanics behind bird nests' uniquely flexible yet cohesive structural properties.
- B) The researchers used laboratory models that simulated the arrangement of flexible sticks and analyzed the points where sticks touched one another.
- C) After analyzing the points where sticks touched, the researchers found that the structures became stiffer when pressure was applied.
- D) As analyzed by Bhosale's team, bird nests are uniquely flexible yet cohesive engineered structures.

#2

ID: 39ccb463

While researching a topic, a student has taken the following notes:

- The *Atlantic Monthly* magazine was first published in 1857.
- The magazine focused on politics, art, and literature.
- In 2019, historian Cathryn Halverson published the book *Faraway Women and the "Atlantic Monthly."*
- Its subject is female authors whose autobiographies appeared in the magazine in the early 1900s.
- One of the authors discussed is Juanita Harrison.

The student wants to introduce Cathryn Halverson's book to an audience already familiar with the *Atlantic Monthly*. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Cathryn Halverson's *Faraway Women and the "Atlantic Monthly"* discusses female authors whose autobiographies appeared in the magazine in the early 1900s.
- B) A magazine called the *Atlantic Monthly*, referred to in Cathryn Halverson's book title, was first published in 1857.
- C) *Faraway Women and the "Atlantic Monthly"* features contributors to the *Atlantic Monthly*, first published in 1857 as a magazine focusing on politics, art, and literature.
- D) An author discussed by Cathryn Halverson is Juanita Harrison, whose autobiography appeared in the *Atlantic Monthly* in the early 1900s.

#3

ID: 16631d34

While researching a topic, a student has taken the following notes:

- The Million Song Dataset (MSD) includes main audio features and descriptive tags for popular songs.
- Audio features include acoustic traits such as loudness and pitch intervals.
- Many algorithms use these audio features to predict a new song's popularity.
- These algorithms may fail to accurately identify main audio features of a song with varying acoustic traits.
- Algorithms based on descriptive tags that describe fixed traits such as genre are more reliable predictors of song popularity.

The student wants to explain a disadvantage of relying on audio features to predict a song's popularity. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Many popularity-predicting algorithms are based on a song's audio features, such as loudness and pitch intervals.
- B) Algorithms based on audio features may misidentify the main features of a song with varying acoustic traits, making such algorithms less reliable predictors of popularity than those based on fixed traits.
- C) Audio features describe acoustic traits such as pitch intervals, which may vary within a song, whereas descriptive tags describe fixed traits such as genre, which are reliable predictors of popularity.
- D) The MSD's descriptive tags are reliable predictors of a song's popularity, as the traits they describe are fixed.

#4

ID: 6c9df5d1

While researching a topic, a student has taken the following notes:

- Some powerful works of literature have so influenced readers that new legislation has been passed as a result.
- *The Interesting Narrative of the Life of Olaudah Equiano* (1789) is the autobiography of a man who endured slavery on both sides of the Atlantic.
- Equiano's book contributed to the passage of the Slave Trade Act of 1807.
- *The Jungle* (1906) is a fictional work by Upton Sinclair that describes unsanitary conditions in US meatpacking plants.
- Sinclair's book contributed to the passage of the Pure Food and Drug Act in 1906.

The student wants to emphasize a difference between the two books. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Although both are powerful works of literature that contributed to new legislation, Equiano's book is an autobiography, while Sinclair's is fictional.
- B) They may have written about different topics, but Equiano and Sinclair both influenced readers.
- C) The 1807 Slave Trade Act resulted in part from a book by Equiano, while the 1906 Pure Food and Drug Act resulted in part from a book by Sinclair.
- D) *The Interesting Narrative of the Life of Olaudah Equiano* and *The Jungle* are two works of literature that contributed to new legislation (concerning the slave trade and food safety, respectively).

#5

ID: 7d5c32e6

While researching a topic, a student has taken the following notes:

- The fifth Solvay Conference on Physics was held in 1927.
- It brought together twenty-nine of the era's preeminent scientists to discuss the emerging field of quantum theory.
- The conference famously featured a debate between physicists Albert Einstein and Niels Bohr.
- Bohr proposed that subatomic entities like electrons had only probable realities until they were observed.
- Einstein argued that subatomic entities like electrons had a reality independent of observation.
- Bohr's position, later called the Copenhagen interpretation, remains the most widely accepted theory of quantum mechanics.

The student wants to place Einstein's argument within its historical context. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) During the dawn of quantum theory, Einstein maintained the independent reality of some subatomic entities, although Bohr's opposing interpretation would become the widely accepted view.
- B) At the 1927 Solvay Conference on Physics, Einstein disagreed with Bohr's argument that subatomic entities like electrons had a reality independent of observation.
- C) The attendees of the 1927 Solvay Conference were among the preeminent scientists of their era, including Einstein, who opposed Bohr's proposal.
- D) In 1927, Einstein and Bohr engaged in a famous debate; Bohr's argument, later called the Copenhagen interpretation, would remain popular decades after.

#6

ID: 8fe4f4ab

While researching a topic, a student has taken the following notes:

- One of history's greatest libraries was the House of Wisdom in Baghdad, Iraq.
- It was founded in the eighth century with the goal of preserving all the world's knowledge.
- Scholars at the House of Wisdom collected ancient and contemporary texts from Greece, India, and elsewhere and translated them into Arabic.
- Writings included those of the Greek philosopher Aristotle and the Indian mathematician Aryabhata.
- The House of Wisdom used Chinese papermaking technology to create paper versions to be studied and shared.

The student wants to explain how the House of Wisdom preserved the world's knowledge. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) The House of Wisdom was known for bringing together knowledge from around the world, including from Greece, India, and China.
- B) Founded in Iraq in the eighth century, the House of Wisdom employed many scholars as translators.
- C) Writings from the Greek philosopher Aristotle and the Indian mathematician Aryabhata were preserved at the House of Wisdom.
- D) The House of Wisdom collected writings from different countries and created paper versions in Arabic to be studied and shared.

#7

ID: 3b02e88a

While researching a topic, a student has taken the following notes:

- The ancient Arab dhow was a sailing vessel distinguishable by its triangular sails and stitched hull construction.
- Dhows were used primarily for trade along the coasts of Arab, South Asian, and East African countries.
- Contemporary shipbuilders in Oman use a mix of modern and traditional materials to build replicas of ancient dhows.
- Most of the materials used are traditional.
- Replica hulls are stitched together using the same traditional coconut palm fiber rope used on the hulls of ancient dhows.

The student wants to make a generalization about the materials used in dhow replicas. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) A traditional material that was used to stitch together the hulls of ancient dhows, coconut palm fiber rope is still used by shipbuilders.
- B) The ancient Arab dhow was a sailing vessel used primarily for trade and distinguishable by its triangular sails.
- C) Although most materials used in dhow replicas are traditional, some modern materials are used.
- D) Contemporary shipbuilders in Oman build replicas of the dhow, which was an ancient sailing vessel with a stitched hull construction.

#8

ID: 64e88c58

While researching a topic, a student has taken the following notes:

- In 1971, experimental musician Pauline Oliveros created *Sonic Meditations*.
- *Sonic Meditations* is not music but rather a series of sound-based exercises called meditations.
- Each meditation consists of instructions for participants to make, imagine, listen to, or remember sounds.
- The instructions for Meditation V state, “walk so silently that the bottoms of your feet become ears.”
- Those for Meditation XVIII state, “listen to a sound until you no longer recognize it.”

The student wants to provide an explanation and an example of Oliveros’s *Sonic Meditations*. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) *Sonic Meditations* is not music but rather a series of sound-based meditations that consist of instructions; Meditation XVIII, for instance, instructs participants to “listen to a sound until you no longer recognize it.”
- B) In 1971, Oliveros created *Sonic Meditations*, a series of meditations that consist of instructions for participants to make, imagine, listen to, or remember sounds.
- C) “Walk so silently that the bottoms of your feet become ears” is one example of the instructions found in Oliveros’s *Sonic Meditations*.
- D) While both meditations consist of instructions, Meditation XVIII instructs participants to “listen,” whereas Meditation V instructs participants to “walk.”

#9

ID: 2c61e0b9

While researching a topic, a student has taken the following notes:

- British musicians John Lennon and Paul McCartney shared writing credit for numerous Beatles songs.
- Many Lennon-McCartney songs were actually written by either Lennon or McCartney, not by both.
- The exact authorship of specific parts of many Beatles songs, such as the verse for “In My Life,” is disputed.
- Mark Glickman, Jason Brown, and Ryan Song used statistical methods to analyze the musical content of Beatles songs.
- They concluded that there is 18.9% probability that McCartney wrote the verse for “In My Life,” stating that the verse is “consistent with Lennon’s songwriting style.”

The student wants to make a generalization about the kind of study conducted by Glickman, Brown, and Song. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Based on statistical analysis, Glickman, Brown, and Song claim that John Lennon wrote the verse of “In My Life.”
- B) There is only an 18.9% probability that Paul McCartney wrote the verse for “In My Life”; John Lennon is the more likely author.
- C) It is likely that John Lennon, not Paul McCartney, wrote the verse for “In My Life.”
- D) Researchers have used statistical methods to address questions of authorship within the field of music.

#10

ID: af88c47a

While researching a topic, a student has taken the following notes:

- Freddie Wong (born 1985) is a director and special effects artist from the United States.
- He is best known for the action-comedy web series *Video Game High School (VGHS)*.
- *VGHS* premiered in 2012 on RocketJump, a YouTube channel that Wong cocreated.
- The series was celebrated for its inventive video game-centric world and high-quality special effects.
- *VGHS* was nominated for a Producers Guild Award for Outstanding Digital Series.

The student wants to begin a narrative about Wong’s award-nominated web series. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) In 2012, director and visual effects artist Freddie Wong launched a new action-comedy web series: *Video Game High School*.
- B) *Video Game High School* was celebrated for its inventive video game-centric world and high-quality special effects, and it was nominated for a Producer’s Guild Award for Outstanding Digital Series.
- C) Wong, cocreator of the YouTube channel RocketJump, would go on to see his web series be nominated for a Producers Guild Award.
- D) In 2012, *Video Game High School* premiered on RocketJump; it would later be nominated for an award.

#11

ID: 9551ef8b

While researching a topic, a student has taken the following notes:

- The magnificent frigatebird (*fregata magnificens*) is a species of seabird that feeds mainly on fish, tuna, squid, and other small sea animals.
- It is unusual among seabirds in that it doesn't dive into the water for prey.
- One way it acquires food is by using its hook-tipped bill to snatch prey from the surface of the water.
- Another way it acquires food is by taking it from weaker birds by force.
- This behavior is known as kleptoparasitism.

The student wants to emphasize a similarity between the two ways a magnificent frigatebird acquires food. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) A magnificent frigatebird never dives into the water, instead using its hook-tipped bill to snatch prey from the surface.
- B) Neither of a magnificent frigatebird's two ways of acquiring food requires the bird to dive into the water.
- C) Of the magnificent frigatebird's two ways of acquiring food, only one is known as kleptoparasitism.
- D) In addition to snatching prey from the water with its hook-tipped bill, a magnificent frigatebird takes food from other birds by force.

#12

ID: 07456405

While researching a topic, a student has taken the following notes:

- Malapportionment is the over- or underrepresentation (relative to population size) of electoral districts in a governing body.
- It is a common feature of representative governments.
- There are 169 seats in Norway's supreme legislature (the Storting).
- Seats are distributed by a formula that awards 1 point per resident and 1.8 points per unit of land.
- Less populated rural districts with large tracts of land receive a disproportionate number of seats compared to smaller but more populated urban districts.

The student wants to refute a claim that malapportionment in the Storting favors small urban districts. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Less populated rural districts are disproportionately underrepresented in the Storting, creating an unfair advantage for smaller but more populated urban districts.
- B) It's untrue that malapportionment in the 169-seat Storting favors small urban districts; rather, the formula for distributing seats overrepresents more populated districts.
- C) A common feature of representative governments, malapportionment occurs when electoral districts are over- or underrepresented.
- D) Awarding more points per unit of land than points per resident, the formula for distributing Storting seats overrepresents less populated rural districts with large tracts of land.

#13

ID: 5fa51c86

While researching a topic, a student has taken the following notes:

- Ulaanbaatar is the capital of Mongolia.
- The city's population is 907,802.
- Ulaanbaatar contains 31.98 percent of Mongolia's population.
- Hanoi is the capital of Vietnam.
- The city's population is 7,781,631.
- Hanoi contains 8.14 percent of Vietnam's population.

The student wants to emphasize the relative sizes of the two capitals' populations. Which choice most effectively uses information from the given sentences to emphasize the relative sizes of the two capitals' populations?

- A) Mongolia's capital is Ulaanbaatar, which has 907,802 people, and Vietnam's capital is Hanoi, which has 7,781,631 people.
- B) Comparing Vietnam and Mongolia, 7,781,631 is 8.14 percent of Vietnam's population, and 907,802 is 31.98 percent of Mongolia's.
- C) Even though Hanoi (population 7,781,631) is larger than Ulaanbaatar (population 907,802), Ulaanbaatar accounts for more of its country's population.
- D) The populations of the capitals of Mongolia and Vietnam are 907,802 (Ulaanbaatar) and 7,781,631 (Hanoi), respectively.

#14

ID: fdd9a360

While researching a topic, a student has taken the following notes:

- The popular wood-wide web theory posits that trees can communicate and exchange resources with one another via common mycorrhizal networks (CMNs) of fungi.
- Ecologist Dr. Suzanne Simard first suggested this theory in 1997.
- She described trees as “super-cooperators.”
- In the 2022 study “The Decay of the Wood-Wide Web?,” mycologist Dr. Justine Karst and colleagues evaluated dozens of CMN studies.
- They write that CMNs “have captured the interest of broad audiences. We are concerned, however, that recent claims about CMNs in forests are disconnected from evidence.”

The student wants to use a quotation to emphasize a potential problem with the wood-wide web theory. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Describing trees as “super-cooperators,” Simard first suggested that trees can exchange resources with one another in 1997.
- B) In “The Decay of the Wood-Wide Web?,” Karst and colleagues note that common mycorrhizal networks “have captured the interest of broad audiences.”
- C) After evaluating dozens of CMN studies, Karst and colleagues expressed concern that recent claims about common mycorrhizal networks are “disconnected from evidence.”
- D) Despite the concerns expressed in the 2022 study “The Decay of the Wood-Wide Web?,” the wood-wide web theory remains popular.

#15

ID: 0fab0c90

While researching a topic, a student has taken the following notes:

- The Gullah are a group of African Americans who have lived in parts of the southeastern United States since the 18th century.
- Gullah culture is influenced by West African and Central African traditions.
- Louise Miller Cohen is a Gullah historian, storyteller, and preservationist.
- She founded the Gullah Museum of Hilton Head Island, South Carolina, in 2003.
- Vermelle Rodrigues is a Gullah historian, artist, and preservationist.
- She founded the Gullah Museum of Georgetown, South Carolina, in 2003.

The student wants to emphasize the duration and purpose of Cohen's and Rodrigues's work. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) At the Gullah Museums in Hilton Head Island and Georgetown, South Carolina, visitors can learn more about the Gullah people who have lived in the region for centuries.
- B) Louise Miller Cohen and Vermelle Rodrigues have worked to preserve the culture of the Gullah people, who have lived in the United States since the 18th century.
- C) Since 2003, Louise Miller Cohen and Vermelle Rodrigues have worked to preserve Gullah culture through their museums.
- D) Influenced by the traditions of West and Central Africa, Gullah culture developed in parts of the southeastern United States in the 18th century.

#16

ID: 10cd0327

While researching a topic, a student has taken the following notes:

- A thermal inversion is a phenomenon where a layer of atmosphere is warmer than the layer beneath it.
- In 2022, a team of researchers studied the presence of thermal inversions in twenty-five gas giants.
- Gas giants are planets largely composed of helium and hydrogen.
- The team found that gas giants featuring a thermal inversion were also likely to contain heat-absorbing metals.
- One explanation for this relationship is that these metals may reside in a planet's upper atmosphere, where their absorbed heat causes an increase in temperature.

The student wants to present the study's findings to an audience already familiar with thermal inversions. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Heat-absorbing metals may reside in a planet's upper atmosphere.
- B) The team studied thermal inversions in twenty-five gas giants, which are largely composed of helium and hydrogen.
- C) Researchers found that gas giants featuring a thermal inversion were likely to contain heat-absorbing metals, which may reside in the planets' upper atmospheres.
- D) Gas giants were likely to contain heat-absorbing metals when they featured a layer of atmosphere warmer than the layer beneath it, researchers found; this phenomenon is known as a thermal inversion.

#17

ID: 1773fa73

While researching a topic, a student has taken the following notes:

- A commodity chain is the series of links connecting the production and purchase of a commodity on the world market.
- Chinese American anthropologist Anna Tsing studies the contemporary commodity chain of matsutake mushrooms.
- At one end of the matsutake chain are mushroom pickers in Oregon.
- At the other end are wealthy consumers who buy the costly matsutake in Japan.
- According to Tsing, "Japanese traders began importing matsutake in the 1980s, when the scarcity of matsutake in Japan first became clear."

The student wants to provide an overview of the matsutake commodity chain. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) The contemporary matsutake commodity chain has its origins in the 1980s when, according to Tsing, "the scarcity of matsutake in Japan first became clear."
- B) Commodity chains include the linked production and purchase of commodities, such as the matsutake mushroom, on the world market.
- C) Decades after the Japanese import of matsutake began, a commodity chain now links matsutake pickers in Oregon with wealthy consumers of the costly mushrooms in Japan.
- D) Wealthy consumers who buy the costly mushrooms in Japan are at one end of the matsutake commodity chain.

#18

ID: 5b8b69a2

While researching a topic, a student has taken the following notes:

- Archaeologist Jon Erlandson and colleagues argue that humans first arrived in the Americas by sea.
- They propose that humans traveled between Pacific Ocean islands and coastlines from northeast Asia to the Americas.
- Many of these islands and coastal zones were later submerged as glaciers melted and sea levels rose.
- The researchers think that “a coastal route, including kelp forests and estuaries, would have provided a rich mix of marine, estuarine, riverine, and terrestrial resources” such as seaweeds, fish, and birds.
- This proposed scenario is known as the kelp highway hypothesis.

The student wants to summarize the kelp highway hypothesis. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Pacific Ocean islands and coastlines likely contained “a rich mix of marine, estuarine, riverine, and terrestrial resources” such as seaweeds, fish, and birds, according to researchers.
- B) One argument about how humans first arrived in the Americas is the kelp highway hypothesis proposed by Jon Erlandson and colleagues.
- C) Humans may have first arrived in the Americas by sea, traveling between Pacific Ocean islands and coastlines and subsisting on a variety of resources.
- D) As glaciers melted and sea levels rose, many Pacific Ocean islands and coastal zones were submerged.

#19

ID: 0acc26b2

While researching a topic, a student has taken the following notes:

- Astronomers estimate that the number of comets orbiting the Sun is in the billions.
- 81P/Wild is one of many comets whose orbit has changed over time.
- 81P/Wild’s orbit once lay between the orbits of Uranus and Jupiter.
- The comet’s orbit is now positioned between the orbits of Jupiter and Mars.

The student wants to make and support a generalization about the orbits of comets. Which choice most effectively uses relevant information from the notes to accomplish these goals?

- A) Astronomers estimate that the number of comets orbiting the Sun is in the billions; the comets’ orbits may change over time.
- B) Like Uranus, Jupiter, and Mars, billions of comets orbit the Sun.
- C) One example of a comet is 81P/Wild, whose orbit around the Sun once lay between Uranus’s and Jupiter’s orbits but is now positioned between those of Jupiter and Mars.
- D) A comet’s orbit around the Sun may change over time: the orbit of comet 81P/Wild once lay between the orbits of Uranus and Jupiter but is now positioned between those of Jupiter and Mars.

#20

ID: 9336f63b

While researching a topic, a student has taken the following notes:

- A small number of US Navy sailors of Filipino descent served during the US Civil War (1861–1865).
- Stephen Amos was born in the Philippines around 1830.
- He enlisted in the US Navy in November 1863.
- Raphael Ignases was born in the Philippines around 1834.
- He enlisted in the US Navy in July 1861.

The student wants to emphasize the historical significance of Stephen Amos’s enlistment date. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Both Stephen Amos and Raphael Ignases were US Navy sailors of Filipino descent, but Amos enlisted in the Navy in 1863, two years later than Ignases.
- B) Stephen Amos was a US Navy sailor of Filipino descent, along with Raphael Ignases, who was born in the Philippines around 1834.
- C) Stephen Amos enlisted in the US Navy in 1863, making him one of the few sailors of Filipino descent to serve in the US Civil War (1861–1865).
- D) When Stephen Amos enlisted in the US Navy in November 1863, he joined sailors such as Raphael Ignases, who had been born in the Philippines around 1834.

#21

ID: de01ccef

While researching a topic, a student has taken the following notes:

- The background colors of US and UK road signs are used to denote each sign's purpose.
- Directional signs are a type of sign containing information such as route names, distance to a destination, etc.
- Highways, major roadways, and minor roadways in the US generally use green for directional signs.
- Highways in the UK generally use blue for directional signs.
- Major roadways in the UK generally use green for directional signs.

The student wants to contrast how green backgrounds are used in US and UK road signs. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Blue backgrounds are generally used on directional highway signs in the UK, in contrast to the green highway signs used in the US.
- B) In the US, green signs indicate directional information on both highways and major roadways, but in the UK, directional signs of this color generally appear only on major roadways.
- C) Green road signs are used in both the US and UK to denote directional information on major roadways, like distance to a destination or route names.
- D) Both the UK and the US use directional signs, which include information on route names and distance to a destination.

#22

ID: cfade68d

While researching a topic, a student has taken the following notes:

- Marcela Guerrero is a curator at the Whitney Museum of American Art in New York.
- She curated the Whitney’s 2018 exhibition *Pacha, Llaqta, Wasichay: Indigenous Space, Modern Architecture, New Art*.
- This exhibition featured works by seven emerging Latino artists.
- She curated the Whitney’s 2020 exhibition *Vida Americana: Mexican Muralists Remake American Art, 1925–1945*.
- This exhibition included nearly 200 works by twentieth-century Latino and Mexican artists.

The student wants to describe the exhibition that Guerrero curated in 2018. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Held at the Whitney Museum of American Art, the exhibition *Vida Americana: Mexican Muralists Remake American Art, 1925–1945* included nearly 200 works by twentieth-century Mexican and Latino artists.
- B) *Pacha, Llaqta, Wasichay: Indigenous Space, Modern Architecture, New Art*, an exhibition at the Whitney Museum of American Art, featured works by seven emerging Latino artists.
- C) In both 2018 and 2020, Marcela Guerrero curated exhibitions at the Whitney Museum of American Art in New York.
- D) While one exhibition that Marcela Guerrero curated featured works by emerging artists, another included works by twentieth-century artists.

#23

ID: 5222ffab

While researching a topic, a student has taken the following notes:

- Neuroscientists Krishnan Padmanabhan and Zhen Chen sought to better understand the workings of the brain's olfactory system.
- They devised a study using mathematical models.
- They found that certain fibers allow the brain to toggle from one method of processing smells to another.
- In one method, cells in the piriform cortex (where the perception of odor forms) capture olfactory information at a given moment.
- In the other, the cells track changes in olfactory information over time.

The student wants to summarize the study's findings. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) To arrive at these findings, which describe dual methods of processing smells in the piriform cortex, Padmanabhan and Chen devised a study using mathematical models.
- B) Padmanabhan and Chen showed that olfactory information is captured by cells in the piriform cortex, where the perception of odor forms.
- C) Using mathematical models, Padmanabhan and Chen devised a study to better understand the workings of the brain's olfactory system.
- D) According to Padmanabhan and Chen, the brain can toggle between capturing olfactory information at a given moment and tracking changes in that information over time.

#24

ID: 3dcc7140

While researching a topic, a student has taken the following notes:

- Nissologists are scientists who study islands.
- Some nissologists define an island as any piece of land surrounded by water.
- Using that definition, they determined that Sweden has 221,000 islands.
- Other nissologists define an island as being 1 kilometer square, a certain distance from the mainland, and having at least 50 permanent residents.
- Using that definition, they determined that Sweden has 24 islands.

The student wants to make and support a generalization about nissologists' definition of an island. Which choice most effectively uses relevant information from the notes to accomplish these goals?

- A) The definition of an island as any piece of land surrounded by water is supported by some nissologists, scientists who study islands.
- B) Multiple counts of Sweden's islands have been based on different definitions of an island.
- C) Based on a recent count, Sweden has a relatively small number of islands with at least 50 permanent residents.
- D) Nissologists' different definitions can result in huge disparities in counts of islands, as the example of Sweden shows.

#25

ID: 622a351d

While researching a topic, a student has taken the following notes:

- In 1978, Sámi activists staged protests to block the construction of a dam on the Alta River in Norway.
- The dam would disrupt Sámi fishing and reindeer herding.
- The dam was ultimately built, but the Alta conflict had a lasting impact.
- It brought international attention to the issue of Sámi rights.
- It led to a set of 2005 legal protections establishing Sámi rights to lands, waters, and resources.

The student wants to make and support a generalization about the Alta conflict. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) During the Alta conflict, Sámi activists staged protests to block the construction of a dam on the Alta River in Norway that would disrupt local fishing and reindeer herding.
- B) Although the dam that the Sámi activists had protested was ultimately built, the Alta conflict had a lasting impact.
- C) Sámi rights to lands, waters, and resources received international attention and legal protections as a result of the Alta conflict.
- D) The Alta conflict had a lasting impact, resulting in international attention and legal protections for Sámi rights to lands, waters, and resources.

#26

ID: 96a86bce

While researching a topic, a student has taken the following notes:

- Cambodia's Angkor Wat was built in the 1100s to honor the Hindu god Vishnu.
- It has been a Buddhist temple since the sixteenth century.
- Decorrelation stretch analysis is a novel digital imaging technique that enhances the contrast between colors in a photograph.
- Archaeologist Noel Hidalgo Tan applied decorrelation stretch analysis to photographs he had taken of Angkor Wat's plaster walls.
- Tan's analysis revealed hundreds of images unknown to researchers.

The student wants to present Tan's research to an audience unfamiliar with Angkor Wat. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Tan photographed Angkor Wat's plaster walls and then applied decorrelation stretch analysis to the photographs.
- B) Decorrelation stretch analysis is a novel digital imaging technique that Tan used to enhance the contrast between colors in a photograph.
- C) Using a novel digital imaging technique, Tan revealed hundreds of images hidden on the walls of Angkor Wat, a Cambodian temple.
- D) Built to honor a Hindu god before becoming a Buddhist temple, Cambodia's Angkor Wat concealed hundreds of images on its plaster walls.

#27

ID: db3ad406

While researching a topic, a student has taken the following notes:

- Stars form in a galaxy when gravity causes a massive cloud of dust and gas to collapse.
- A galaxy in a phase of rapid star formation is called a starburst galaxy.
- Quenching is a process in which a galaxy loses star-forming gas.
- A galaxy that no longer forms stars is called a quenched galaxy.
- A quenched galaxy has entered the poststarburst phase.

The student wants to explain what a quenched galaxy is. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Before quenching, a starburst galaxy will form stars at a rapid rate.
- B) When it becomes quenched, a starburst galaxy enters the poststarburst phase.
- C) Having entered the poststarburst phase, a quenched galaxy is one that no longer forms stars.
- D) A starburst galaxy will lose star-forming gas and eventually become quenched.

#28

ID: 973632d2

While researching a topic, a student has taken the following notes:

- In North America, woodlands have expanded into areas that were once grasslands.
- Thomas Rogers and F. Leland Russell of Wichita State University investigated whether woodland expansion is related to changes in climate.
- Rogers and Russell analyzed core samples from oak trees on a site that was not wooded in the past and indexed the age of the trees with historical climate data to see if tree populations and climate were correlated.
- Tree population growth was associated with dry intervals.
- Droughts may have played a role in woodland expansion.

The student wants to emphasize the aim of the research study. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Thomas Rogers and F. Leland Russell, researchers at Wichita State University, wanted to know if woodland expansion is related to changes in climate.
- B) Thanks to the work done by Thomas Rogers and F. Leland Russell, we now know that droughts may have played a role in woodland expansion.
- C) Wichita State University researchers have determined that tree population growth was associated with dry intervals.
- D) Thomas Rogers and F. Leland Russell analyzed core samples from oak trees on a site that was not wooded in the past, indexing the age of the trees with historical climate data.

#29

ID: e98b1690

While researching a topic, a student has taken the following notes:

- Bike-share programs provide bicycles for shared use.
- In docked bike sharing, riders rent a bike and return it to designated docking stations.
- Docked programs are orderly and offer consistency to riders but require significant space and money to implement.
- In dockless bike sharing, riders locate a bike and leave it wherever they choose.
- Dockless programs are relatively simple and inexpensive to implement and offer flexibility to riders.
- Dockless programs can be disorganized.

The student wants to compare some disadvantages of docked and dockless bike-share programs. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Dockless programs can be disorganized; docked programs, on the other hand, offer order and consistency.
- B) Worth noting is that while dockless programs are relatively easy and inexpensive to implement, they are less flexible than docked programs.
- C) Docked programs are more resource-intensive than dockless programs, but they avoid some of the latter's organizational challenges.
- D) Though dockless programs offer flexibility, docked bike-share programs provide bicycles for shared use.

#30

ID: 8d1ddd1b

While researching a topic, a student has taken the following notes:

- Ducklings expend up to 62.8% less energy when swimming in a line behind their mother than when swimming alone.
- The physics behind this energy savings hasn't always been well understood.
- Naval architect Zhiming Yuan used computer simulations to study the effect of the mother duck's wake.
- The study revealed that ducklings are pushed in a forward direction by the wake's waves.
- Yuan determined this push reduces the effect of wave drag on the ducklings by 158%.

The student wants to present the study and its methodology. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) A study revealed that ducklings, which expend up to 62.8% less energy when swimming in a line behind their mother, also experience 158% less drag.
- B) Seeking to understand how ducklings swimming in a line behind their mother save energy, Zhiming Yuan used computer simulations to study the effect of the mother duck's wake.
- C) Zhiming Yuan studied the physics behind the fact that by being pushed in a forward direction by waves, ducklings save energy.
- D) Naval architect Zhiming Yuan discovered that ducklings are pushed in a forward direction by the waves of their mother's wake, reducing the effect of drag by 158%.

#31

ID: b44141cf

While researching a topic, a student has taken the following notes:

- Researchers in a 2021 study wanted to determine the rate at which 17 languages conveyed both information and syllables.
- They calculated the bits of information conveyed per second (the IR, or information rate).
- The IR was found to be approximately consistent across the 17 languages (an average of 39 bits per second).
- They calculated the number of syllables spoken per second (the SR, or syllable rate).
- Spanish had the second-fastest SR (7.7 syllables per second).
- Vietnamese had the sixteenth-fastest SR (5.3 syllables per second).

The student wants to present an overview of the study's findings. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) The 2021 study determined the information rate (IR) of 17 languages in bits of information conveyed per second.
- B) Researchers found that information was conveyed more quickly in Spanish, at 7.7 syllables per second, than in Vietnamese, at 5.3 syllables per second.
- C) Vietnamese had the sixteenth-fastest syllable rate, lower than that of Spanish, which had the second-fastest; however, Spanish had the lower information rate of the two.
- D) Though some of the languages differed in number of syllables spoken per second, all 17 conveyed information at roughly the same rate.

#32

ID: c34d6bff

While researching a topic, a student has taken the following notes:

- African American women played prominent roles in the Civil Rights Movement, including at the famous 1963 March on Washington.
- Civil rights activist Anna Hedgeman, one of the march's organizers, was a political adviser who had worked for President Truman.
- Civil rights activist Daisy Bates was a well-known journalist and advocate for school desegregation.
- Hedgeman worked behind the scenes to make sure a woman was included in the lineup of speakers at the march.
- Bates was the sole woman to speak, delivering a brief but memorable address to the cheering crowd.

The student wants to compare the two women's contributions to the March on Washington. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Hedgeman and Bates contributed to the march in different ways; Bates, for example, delivered a brief but memorable address.
- B) Hedgeman worked in politics and helped organize the march, while Bates was a journalist and school desegregation advocate.
- C) Although Hedgeman worked behind the scenes to make sure a woman speaker was included, Bates was the sole woman to speak at the march.
- D) Many African American women, including Bates and Hedgeman, fought for civil rights, but only one spoke at the march.

#33

ID: ec03f090

While researching a topic, a student has taken the following notes:

- A sestina is a thirty-nine-line poetic form.
- Each line of the poem ends with one of six end words, which alternate according to a set pattern.
- “Forage Sestina” is a sestina by Marilyn Hacker.
- Its end words are *words*, *structure*, *wire*, *beam*, *wall*, and *room*.
- “Towards Autumn” is a sestina by Marilyn Hacker.
- Its end words are *daughter*, *friend*, *bread*, *mother*, *lover*, and *myself*.

The student wants to use one of the poems to illustrate the sestina form. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Hacker employs the sestina, a poetic form with thirty-nine lines and six end words, in both “Forage Sestina” and “Towards Autumn.”
- B) As a sestina, “Towards Autumn” contains thirty-nine lines and six end words—in this case, *daughter*, *friend*, *bread*, *mother*, *lover*, and *myself*—that alternate in a set pattern.
- C) The thirty-nine-line sestina form uses the words *daughter*, *friend*, *bread*, *mother*, *lover*, and *myself*, which are found in the poem “Forage Sestina.”
- D) Hacker has used the sestina form multiple times, as in “Towards Autumn,” which contains these six words: *words*, *structure*, *wire*, *beam*, *wall*, and *room*.

#34

ID: c40a1964

While researching a topic, a student has taken the following notes:

- Leigh Torres is a marine ecologist.
- She conducted a study of blue whales in New Zealand’s South Taranaki Bight region.
- She wanted to know how ocean temperature affects where the whales forage for krill in that region.
- She found that during a marine heat wave, the whales foraged farther offshore than they had during cooler periods.
- The offshore waters, which were colder than areas closer to shore, had a higher relative abundance of krill.

The student wants to emphasize the aim of the research study. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Analyzing ocean temperature data, Torres found that during a marine heat wave, blue whales foraged farther offshore than they had during cooler periods.
- B) In her study, Torres sought to determine how ocean temperature affects where blue whales forage for krill in the South Taranaki Bight region.
- C) Torres’s study revealed that blue whales were attracted to offshore waters with a relatively high abundance of krill.
- D) Torres, a marine ecologist, studied blue whales in the South Taranaki Bight region, where the whales forage.

#35

ID: e8494245

While researching a topic, a student has taken the following notes:

- Political scientist Graham Allison is known for his Thucydides trap theory.
- Allison's theory states that whenever "a rising power is threatening to displace a ruling power," conflict is likely.
- The theory is based on Thucydides's explanation of the conflict between Athens and Sparta.
- Thucydides wrote that "the rise of Athens and the fear this instilled in Sparta" made conflict "inevitable."
- History professor Edmund Stewart recently challenged the historical basis of the theory.
- Stewart claimed that Athens was not a rising power and that the rivals experienced a "clash of cultures" instead.

The student wants to use a quotation to challenge Thucydides's explanation of the conflict between Athens and Sparta. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) According to Allison's Thucydides trap theory, whenever "a rising power is threatening to displace a ruling power," conflict is likely.
- B) Thucydides wrote that conflict between the two powers was "inevitable," although Stewart later challenged the historical basis of this claim.
- C) According to Stewart, a "clash of cultures" between Athens and Sparta caused the conflict, not Athens's rise.
- D) Thucydides explained that conflict was caused by "the rise of Athens and the fear this instilled in Sparta," but Allison disagreed, seeing the conflict as an example of the Thucydides trap.

#36

ID: 56b000d0

While researching a topic, a student has taken the following notes:

- The factors that affect clutch size (the number of eggs laid at one time) have been well studied in birds but not in lizards.
- A team led by Shai Meiri of Tel Aviv University investigated which factors influence lizard clutch size.
- Meiri's team obtained clutch-size and habitat data for over 3,900 lizard species and analyzed the data with statistical models.
- Larger clutch size was associated with environments in higher latitudes that have more seasonal change.
- Lizards in higher-latitude environments may lay larger clutches to take advantage of shorter windows of favorable conditions.

The student wants to emphasize the aim of the research study. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Researchers wanted to know which factors influence lizard egg clutch size because such factors have been well studied in birds but not in lizards.
- B) After they obtained data for over 3,900 lizard species, researchers determined that larger clutch size was associated with environments in higher latitudes that have more seasonal change.
- C) We now know that lizards in higher-latitude environments may lay larger clutches to take advantage of shorter windows of favorable conditions.
- D) Researchers obtained clutch-size and habitat data for over 3,900 lizard species and analyzed the data with statistical models.