

Main Idea

Question 1

Cognitive bias is a systematic pattern of deviation from norm or rationality in judgment. It is often studied in psychology, sociology, and behavioral economics. Although the reality of most of these biases is confirmed by reproducible research, there are often controversies about how to classify these biases or how to explain them. Several theoretical causes are known for some cognitive biases, which provide a classification of biases by their common generative mechanism (such as noisy information-processing). In social science, it has been observed that cognitive biases influence people's judgments and decision-making processes, leading to irrational outcomes in social contexts. For example, the halo effect is a cognitive bias where a person's overall impression of someone influences how they feel and think about their character.

Which choice best states the main idea of the text?

- A** Despite extensive reproducible research confirming the existence of most cognitive biases, there are ongoing controversies regarding their classification and underlying theoretical causes, particularly concerning noisy information-processing as a common generative mechanism.
- B** The field of social science has extensively studied cognitive biases, such as the halo effect, demonstrating that these systematic deviations from rationality significantly impact individuals' judgments and decision-making processes within various social contexts.

- C** Cognitive bias, defined as a systematic deviation from rational judgment, is a widely studied phenomenon in various social science disciplines, and its influence on potentially irrational judgments and decision-making in social contexts has been observed, with examples like the halo effect illustrating this impact.
- D** While psychology, sociology, and behavioral economics have confirmed the reality of cognitive biases through reproducible research, the primary challenge in understanding these phenomena lies in the lack of consensus on a unified classification system and the precise theoretical causes, including the role of noisy information-processing.

Question 2

Myxobolus cerebralis is a myxosporean parasite that requires two hosts to complete its life cycle: a salmonid fish and a tubificid worm, *Tubifex tubifex*. Myxospores released from infected fish are ingested by the worms, where they develop into triactinomyxon spores. These triactinomyxon spores are then released into the water and can infect a fish host by penetrating its skin. The parasite then migrates to the cartilage, where it develops into the myxospore stage, causing skeletal deformities and neurological damage in susceptible fish, leading to the characteristic whirling behavior of infected individuals. The prevalence and severity of *Myxobolus cerebralis* infection in fish populations are influenced by various environmental factors and the genetic diversity of *Tubifex tubifex* populations, as certain lineages exhibit different susceptibility to the parasite.

Which choice best states the main idea of the text?

- A** The complex life cycle of the myxosporean parasite *Myxobolus cerebralis* involves two distinct hosts, a salmonid fish and a tubificid worm, and its prevalence and severity in fish populations are influenced by environmental factors and the genetic makeup of the worm populations.
- B** *Myxobolus cerebralis* is a devastating parasite that causes whirling disease in salmonid fish, leading to significant ecological and economic impacts due to the skeletal deformities and neurological damage it inflicts upon infected individuals.
- C** The development of *Myxobolus cerebralis* from myxospores ingested by *Tubifex tubifex* worms to triactinomyxon spores released into the water is a critical stage in the parasite's life cycle and a key factor in the transmission of whirling disease to salmonid fish.
- D** Different genetic lineages of *Tubifex tubifex* exhibit varying degrees of susceptibility to *Myxobolus cerebralis* infection, which significantly impacts the overall prevalence and severity of whirling disease in salmonid fish populations.

Question 3

Canis lupus arctos, commonly known as the Arctic wolf, is a subspecies of gray wolf native to the High Arctic. These wolves have developed remarkable morphological and behavioral adaptations to survive in their extremely cold and resource-scarce environment. Notably, they possess a thick double-layered coat providing superior insulation and a countercurrent heat exchange system in their paws to minimize thermal loss on frozen substrates. Unlike many other wolf populations, Arctic wolves rely heavily on hunting large migratory prey, such as *Ovibos moschatus* (muskoxen) and *Rangifer tarandus* (caribou). This dependence on highly mobile prey necessitates a less territorial and more nomadic lifestyle compared to their southern counterparts, often ranging over vast areas to follow food sources.

Which choice best states the main idea of the text?

- A The *Canis lupus arctos* has a unique double-layered coat and a countercurrent heat exchange system in its paws that are essential for minimizing thermal loss in its cold environment.
- B While most wolf populations exhibit territorial behavior, the *Canis lupus arctos* is characterized by a more nomadic lifestyle due to its reliance on hunting large migratory prey like *Ovibos moschatus* and *Rangifer tarandus*.
- C The survival of *Canis lupus arctos* in the High Arctic is facilitated by specific physical and behavioral adaptations, including unique physiological features and a nomadic hunting strategy dictated by the movements of its primary prey.
- D The dependence of *Canis lupus arctos* on large migratory prey, such as *Ovibos moschatus* and *Rangifer tarandus*, is the most significant factor influencing its survival in the High Arctic.

Question 4

Brevibacillus bacteria, a genus of Gram-positive, spore-forming bacteria, are widely distributed in various environments and have attracted significant scientific interest due to their diverse metabolic capabilities and production of a wide array of bioactive compounds, including antimicrobial peptides and enzymes. Research has explored their potential in numerous applications, such as biological control of plant pathogens, degradation of environmental pollutants, and production of industrial enzymes. For instance, studies have demonstrated the efficacy of *Brevibacillus* species in suppressing fungal diseases in crops and breaking down complex organic molecules. The multifaceted nature of these microorganisms underscores their ecological importance and their promising utility in biotechnological processes.

Which choice best states the main idea of the text?

- A** The *Brevibacillus* genus of Gram-positive, spore-forming bacteria is primarily being researched for its ability to produce industrial enzymes that can break down complex organic molecules.
- B** *Brevibacillus* bacteria are a ubiquitous and scientifically significant group of microorganisms with diverse capabilities that make them valuable for various biotechnological and environmental applications.
- C** While *Brevibacillus* bacteria show promise in biological control and environmental remediation, their full potential cannot be realized until the specific mechanisms of their antimicrobial peptide production are thoroughly understood.
- D** The production of antimicrobial peptides by *Brevibacillus* species is the most important characteristic that distinguishes them from other Gram-positive, spore-forming bacteria and makes them useful in suppressing fungal diseases in crops.

Question 5

The *Epic of Gilgamesh*, one of the oldest known literary works, has captivated scholars for centuries. Composed in ancient Mesopotamia, the various iterations of the narrative, from the Old Babylonian period through the Standard Babylonian version edited by Sîn-lēlī-šumi-āšur, hero-king whose journey reflects universal human concerns. While early scholarship often focused on the striking parallels between the *Epic of Gilgamesh* and the biblical flood narrative, more recent analyses delve into the protagonist's transformation from a tyrannical ruler to a wise leader who grapples with the inevitability of death and the search for meaning in human endeavors, such as constructing the walls of Uruk.

Which choice best states the main idea of the text?

- A** Early scholarly examinations of the *Epic of Gilgamesh* primarily concentrated on identifying similarities between its flood account and the biblical story of Noah's Ark.
- B** Over time, scholarly interpretations of the *Epic of Gilgamesh* have shifted from focusing on its flood narrative parallels to analyzing the protagonist's evolution and the epic's exploration of profound human themes like mortality and the pursuit of significance.
- C** The various versions of the *Epic of Gilgamesh*, including the Old Babylonian and Standard Babylonian editions, highlight the consistent portrayal of Gilgamesh as a wise and just ruler throughout Mesopotamian history.
- D** Sîn-lēlī-šumi-āšur's editing of the Standard Babylonian version of the *Epic of Gilgamesh* was the most crucial factor in shifting scholarly attention towards the epic's universal themes of friendship and the human condition.

Question 6

Seventeenth-century Dutch *vanitas* still life paintings are renowned for their meticulous detail and rich symbolism, serving as *memento mori*—reminders of the inevitability of death and the transient nature of earthly life and possessions. Artists like Pieter Claesz masterfully depicted various objects, each carrying a specific symbolic weight. For instance, a skull universally represents mortality, while a snuffed-out candle or an hourglass signifies the passage of time and the brevity of existence. These works encouraged contemplation on the futility of material wealth and sensory pleasures in the face of eternity, often contrasting luxurious items with symbols of decay and death to drive home their profound moral and spiritual message. Despite their seemingly straightforward depiction of inanimate objects, these paintings were deeply allegorical, prompting viewers to reflect on their own mortality and the pursuit of a virtuous life over worldly accumulation.

Which choice best states the main idea of the text?

- A** Seventeenth-century Dutch *vanitas* still life paintings utilized detailed depictions of objects and their symbolic meanings to remind viewers of the transience of life and the unimportance of material possessions.
- B** Artists in the seventeenth century, such as Pieter Claesz, were highly skilled in rendering realistic depictions of various objects in *vanitas* still life paintings, including skulls and hourglasses, which were popular symbols of mortality and the passage of time.
- C** The inclusion of specific objects like snuffed-out candles and hourglasses in seventeenth-century Dutch *vanitas* still life paintings was solely intended to showcase the artist's technical ability to depict different textures and light effects with meticulous detail.
- D** While seventeenth-century Dutch *vanitas* still life paintings incorporated symbols of mortality and the passage of time, their primary purpose was to celebrate the material wealth and luxurious lifestyle enjoyed by the Dutch Republic during the Golden Age.

Question 7

In her analysis of the *Chanson de Roland*, a foundational text of French literature, scholar Anne Marie Holland (2020) examines the strategic deployment of formulaic linguistic structures, specifically the *laissez-aller*, a narrative device characterized by assonating verses that typically present a single action or description. Holland argues that while seemingly repetitive, this systematic utilization of the *laissez-aller* contributes significantly to the mnemonic function of the epic poem, aiding in its oral transmission and reception among medieval audiences. Furthermore, the variations, albeit subtle, within these repeated structures prevent monotony and allow for nuanced emphasis on particular heroic deeds or emotional states, thus enhancing the overall aesthetic and narrative impact of the performance. This intricate balance between standardized patterns and slight deviations underscores a sophisticated understanding of audience engagement and memory retention in pre-literate or semi-literate societies.

Which choice best states the main idea of the text?

- A** Anne Marie Holland's analysis suggests that the *laissez-aller* in the *Chanson de Roland*, despite its repetitive nature, was a sophisticated poetic device that enhanced memorability and emotional impact for its intended audience.
- B** The *Chanson de Roland* is a complex epic poem that utilized a variety of sophisticated narrative devices to ensure its accurate oral transmission across generations in medieval French society.
- C** Medieval audiences of oral epic poetry relied heavily on formulaic linguistic structures such as the *laissez-aller* for comprehension and retention of lengthy and complex narratives.
- D** The systematic utilization of repetitive linguistic structures in epic poems like the *Chanson de Roland* is a clear indicator of the limited improvisational capacity of medieval poets and the straightforward cognitive processes of their audiences.

Question 8

Complex social phenomena are characterized by their high-dimensionality, nonlinearity, and often computational intractability, making them challenging to study. However, understanding these phenomena is crucial for addressing pressing societal issues. Social scientists utilize a variety of theoretical approaches and methodologies to investigate the interplay between individual agency and overarching social structures, cultural norms, power dynamics, and social interactions. This approach aims to illuminate the intricate connections between individual psychology and broader social phenomena, acknowledging the reciprocal relationship between the individual and the social environment. By examining how individuals and groups are influenced by and, in turn, shape social forces such as culture, norms, values, social class, and institutions, researchers gain insights into the underlying mechanisms driving social order and change. The diversity of theoretical approaches in social science research stems from the recognition that the social world is multifaceted and dynamic.

Which choice best states the main idea of the text?

- A** The study of complex social phenomena in social science is multifaceted and challenging, requiring diverse approaches to understand the dynamic relationship between individuals and societal forces.
- B** Social science research primarily focuses on quantitative methodologies to analyze high-dimensional and nonlinear social phenomena and their computational intractability.
- C** While complex social phenomena are difficult to study due to their computational intractability, social scientists have developed a single, universally applicable theoretical framework to address them.
- D** Individual agency is the sole determinant of social order and change, and social science research focuses exclusively on how individuals

shape cultural norms and institutional structures.

Question 9

While many anuran species rely on vocalizations for communication, a recent study published in *PeerJ* in 2019 highlights unusual behaviors in the dyeing poison frog, *Dendrobates tinctorius*, particularly concerning their communication strategies. Contrary to the prevalence of acoustic signaling in other dendrobatids for mate attraction and territorial defense, *Dendrobates tinctorius* exhibits a notable reduction in advertisement calls. Instead, researchers speculate that in the absence of pronounced acoustic signals, these diurnal and visually striking frogs likely utilize a combination of tactile stimuli and both static and dynamic visual signals, such as their distinct dorsal color patterns and behaviors, for complex social interactions and navigation within their habitat. This suggests a fascinating evolutionary divergence in communication methods within the poison frog family.

Which choice best states the main idea of the text?

- A** The study published in *PeerJ* in 2019 definitively proves that *Dendrobates tinctorius* has completely lost the ability to produce acoustic signals for communication, relying solely on visual and tactile stimuli.
- B** A recent study on *Dendrobates tinctorius* suggests that this species deviates from the typical acoustic communication observed in many other anurans and dendrobatids, likely employing visual and tactile signals for social interactions.
- C** *Dendrobates tinctorius*, a visually striking diurnal frog, primarily uses its vibrant dorsal color patterns for defense against predators rather than for intraspecific communication, as suggested by the 2019 *PeerJ* study.
- D** The prevalence of acoustic signaling in most anuran species for mate attraction and territorial defense indicates that the reduced vocalizations in *Dendrobates tinctorius* represent a maladaptive trait that negatively impacts their reproductive success and survival.

Question 10

In the realm of urban sociology, the phenomenon of residential self-selection posits that individuals are not merely passive occupants of their built environment but actively choose residential locations that align with their socioeconomic characteristics, lifestyle preferences, and perceived access to opportunity structures. This elective residential mobility, particularly evident in metropolitan areas undergoing significant demographic and economic shifts, contributes to the spatial sorting of populations. For instance, research by Dr. Eleanor Vance in 2018 on post-industrial cities demonstrated a clear tendency for higher-income households with specific *lifestyle preferences* to gravitate towards areas with perceived superior *opportunity structures*, thereby reinforcing existing sociospatial inequalities and neighborhood-level resource disparities.

Which choice best states the main idea of the text?

- A** The spatial distribution of socioeconomic groups within metropolitan areas is primarily a consequence of historical industrial development patterns rather than contemporary individual residential choices.
- B** Research by Dr. Eleanor Vance in 2018 provided the first empirical evidence supporting the long-debated concept of residential self-selection in urban sociology, fundamentally altering the field's understanding of sociospatial dynamics.
- C** The concept of residential self-selection, where individuals' active choices of where to live are influenced by their attributes and desired access to resources, plays a significant role in shaping the spatial organization and inequalities observed in urban environments.
- D** While residential self-selection contributes to spatial sorting, its impact on neighborhood-level resource disparities is less significant than other factors such as municipal zoning regulations and infrastructure investment patterns.

Question 11

Ants are considered ecosystem engineers due to their significant impact on soil properties. Research indicates that various ant species, such as *Formica aquilonia* and *Solenopsis invicta*, alter the physical and chemical composition of the soil in and around their nests. These alterations include changes in soil pH, nutrient content (like nitrogen and phosphorus), organic matter, and soil moisture. For instance, studies have shown an increase in soil pH towards neutral values in some ant nests, as well as a higher concentration of organic matter and specific nutrients compared to the surrounding soil. This modification of the soil environment can influence microbial communities and vegetation patterns in the vicinity of ant mounds.

Which choice best states the main idea of the text?

- A** The foraging behavior of ant species like *Formica aquilonia* and *Solenopsis invicta* significantly increases the presence of essential nutrients in the soil around their nests, leading to altered soil chemistry.
- B** The impact of ants as ecosystem engineers is primarily evident in their ability to physically restructure the soil through the construction of intricate nest mounds and subterranean tunnel systems.
- C** Specific ant species, including *Formica aquilonia* and *Solenopsis invicta*, are known to create noticeable changes in local plant life and soil microbial populations as a direct consequence of their nesting activities.
- D** Ants, acting as ecosystem engineers, substantially modify the physical and chemical characteristics of the soil in and around their nests, as demonstrated by research on species such as *Formica aquilonia* and *Solenopsis invicta*.

Question 12

Academic investigations into the impact of the Black Death (1346-1353) on subsequent aesthetic production in Western Europe have historically focused on macabre and pessimistic themes in visual art and literature, aligning with the immediate devastation and societal upheaval wrought by the pandemic. However, recent scholarship, including analysis by art historian Dr. Eleanor Wainwright in her *Studies in Medieval Iconography* (2021), suggests a more nuanced and multifaceted artistic response. Wainwright's examination of illuminated manuscripts and church architecture from the late 14th and 15th centuries reveals not only expressions of grief and mortality but also a surprising prevalence of themes of renewal, community resilience, and fervent religious devotion, indicating a broader spectrum of creative interpretations than previously acknowledged.

Which choice best states the main idea of the text?

- A** The Black Death resulted in a monolithic artistic focus on themes of death and despair in Western European visual art and literature.
- B** Contrary to earlier interpretations, recent academic analysis indicates that Western European artistic responses to the Black Death included themes of hope and community in addition to expressions of grief.
- C** Dr. Eleanor Wainwright's *Studies in Medieval Iconography* is a groundbreaking work that completely overturns all previous understandings of the Black Death's influence on medieval art.
- D** Illuminated manuscripts and church architecture are the only reliable sources for understanding the multifaceted artistic responses to the Black Death in late 14th and 15th century Western Europe, according to Dr. Eleanor Wainwright.

Question 13

Scholarly analysis by Dr. Alistair Black in 2000 in *The Public Library in Britain 1914-2000* delves into the historical evolution and societal impact of public libraries in Britain throughout the 20th century. Black meticulously examines the multifaceted roles these institutions have played, transitioning from centers of educational uplift to providers of popular reading material and eventually to comprehensive information hubs grappling with the advent of digital technologies and changing governmental priorities. His work highlights how the architecture, funding, and public perception of libraries have continuously adapted to the shifting sociopolitical landscape, reflecting broader changes in British society's relationship with knowledge, culture, and community access. This detailed historical investigation underscores the enduring, albeit transformed, significance of the public library as a vital social institution.

Which choice best states the main idea of the text?

- A** Dr. Alistair Black's 2000 analysis, *The Public Library in Britain 1914-2000*, primarily focuses on the architectural styles and funding models that influenced British public libraries during the 20th century.
- B** Dr. Alistair Black's scholarly analysis details the consistent and unchanging role of British public libraries as centers of educational uplift throughout the 20th century, despite technological advancements.
- C** *The Public Library in Britain 1914-2000* by Dr. Alistair Black argues that the most significant challenge faced by British public libraries in the 20th century was adapting to the introduction of digital technologies.
- D** The scholarly analysis by Dr. Alistair Black provides a comprehensive historical account of how British public libraries transformed over the 20th century in response to societal changes, maintaining their importance as social institutions.

Question 14

Luca Pacioli, an Italian mathematician and Franciscan friar, published *De Divina Proportione* in 1509, a work that delves into mathematical and artistic proportion, particularly the golden ratio, and its applications. This book, famously illustrated by Leonardo da Vinci, examines the golden ratio from a mathematical standpoint, drawing on Euclid's work and assigning mystical and religious significance to the ratio. The second part, *Trattato dell'architettura*, discusses the application of mathematics, specifically Vitruvius's ideas on architectural proportions, and compares the proportions of the human body to artificial structures, referencing classical Greco-Roman architecture. Pacioli's work significantly influenced the Renaissance by merging art, science, and mathematics.

Which choice best states the main idea of the text?

- A** Luca Pacioli's *De Divina Proportione* explored the mathematical and artistic implications of the golden ratio and architectural proportions, influencing the integration of mathematics and art during the Renaissance.
- B** The collaboration between Luca Pacioli and Leonardo da Vinci on *De Divina Proportione* was a primary example of how artists and mathematicians worked together during the Renaissance to advance scientific understanding.
- C** *Trattato dell'architettura*, the second part of Luca Pacioli's *De Divina Proportione*, was primarily concerned with presenting Vitruvius's ideas on applying mathematics to architectural design through comparisons with the human body and classical structures.
- D** Luca Pacioli's *De Divina Proportione* is a comprehensive treatise that not only examines the mathematical properties and mystical significance of the golden ratio but also provides a detailed historical account of its use in classical Greco-Roman architecture.

Question 15

The Yoruba people of West Africa possess a rich and enduring artistic tradition, deeply interwoven with their cultural and spiritual beliefs. Their artistic expression encompasses a wide array of forms, including sculpture, metalwork, textiles, and beadwork. Beyond mere aesthetics, these creations serve profound functions within Yoruba society. For instance, intricately carved masks are not merely decorative objects but are integral to ceremonial practices, believed to embody spirits and facilitate communication with ancestors and deities during rituals and festivals. Similarly, various art objects are placed on shrines to honor deities and ancestors. The *Ifá* literary corpus provides insight into the mythological origins of this artistic heritage, indicating deities like Ogun and Obatala as central to the creation of artistry. This complex relationship between art, spirituality, and daily life highlights the centrality of artistic production to Yoruba identity and practice.

Which choice best states the main idea of the text?

- A** The artistic traditions of the Yoruba people are multifaceted and deeply integrated with their spiritual beliefs and ceremonial life, serving functional as well as aesthetic purposes.
- B** Yoruba art, including sculpture and metalwork, is primarily characterized by its aesthetic beauty and intricate designs, reflecting a long history of skilled craftsmanship in West Africa.
- C** The *Ifá* literary corpus is the most important element in understanding Yoruba art, as it details the specific deities who are believed to have originated artistic creation among the Yoruba people.
- D** While Yoruba art serves some spiritual functions, its primary role is to honor tribal leaders and commemorate historical events through various artistic forms such as masks and beadwork.

Question 16

Reciprocal altruism, a behavior where an organism acts in a manner that temporarily reduces its fitness while increasing another organism's fitness, with the expectation that the other organism will act in a similar manner at a later time, has long been a subject of fascination and research in the field of evolutionary biology and social science. While initially debated whether this complex social behavior was uniquely human, extensive observational and experimental studies on various non-human primate species, such as the *Macaca mulatta* and *Pan troglodytes*, have provided compelling evidence demonstrating the presence of reciprocal altruism. These studies meticulously document instances of food sharing, grooming, and coalition formation that cannot be fully explained by kin selection or mutualism alone, suggesting a more intricate understanding of social exchange and delayed reciprocity in these species.

Which choice best states the main idea of the text?

- A** The study of reciprocal altruism in *Macaca mulatta* and *Pan troglodytes* has definitively proven that this behavior is not present in other non-human primate species.
- B** Reciprocal altruism is a complex social behavior that was initially believed to be exclusive to humans, but research on non-human primates, particularly *Macaca mulatta* and *Pan troglodytes*, has revealed its existence in these species.
- C** Kin selection and mutualism are the primary explanations for observed instances of food sharing, grooming, and coalition formation in *Macaca mulatta* and *Pan troglodytes*.
- D** While the presence of reciprocal altruism in humans is well-established, its existence in *Macaca mulatta* and *Pan troglodytes* is still a highly debated topic within the scientific community.

Question 17

Archaeological analyses of distribution patterns of Attic and Corinthian pottery across the Mediterranean have revealed intricate trade networks in the ancient Greek world. These networks facilitated not only the exchange of *red-figure* and *black-figure* ceramic vessels, which are highly durable and thus well-preserved in archaeological contexts, but also the dissemination of cultural influences and artistic styles. The prevalence of Greek pottery in regions distant from its production centers underscores its economic significance as a commodity and its role in fostering interregional connections. The stylistic evolution observed in these widely traded artifacts further illuminates the dynamic interactions and influences between different cultural spheres.

Which choice best states the main idea of the text?

- A** The discovery of *red-figure* and *black-figure* ceramic vessels in distant locations is evidence of ancient Greek colonization and expansion throughout the Mediterranean region.
- B** The widespread distribution of Attic and Corinthian pottery provides substantial evidence for the complex economic and cultural exchange networks that existed in the ancient Greek world.
- C** The durability of ceramic vessels, such as *red-figure* and *black-figure* pottery, makes them particularly valuable artifacts for archaeologists studying ancient trade routes and networks.
- D** Stylistic changes in Attic and Corinthian pottery reflect the artistic innovations and technical advancements achieved by ancient Greek potters in response to interregional cultural contact.

Question 18

Functional magnetic resonance imaging (fMRI) is a neuroimaging technique that measures brain activity by detecting changes in blood flow. In social science research, fMRI has become a valuable tool for investigating the neural underpinnings of complex human behaviors, such as decision-making, social cognition, and emotional responses. Studies employing fMRI have provided insights into how different brain regions are involved in processing social stimuli and making economic choices. For instance, research by Knutson et al. (2007) utilized fMRI to identify neural predictors of purchase decisions, observing activity in areas associated with anticipated reward and loss. This demonstrates the capacity of fMRI to reveal the neural processes that correlate with observable behaviors in social contexts.

Which choice best states the main idea of the text?

- A** Research utilizing functional magnetic resonance imaging has primarily focused on mapping the neural correlates of basic sensory perception and motor control in humans.
- B** Functional magnetic resonance imaging is a relatively new and untested technology with limited applications in understanding complex human social behaviors and decision-making processes.
- C** The study by Knutson et al. (2007) is the single most important piece of research demonstrating the effectiveness of functional magnetic resonance imaging in predicting consumer purchasing behavior.
- D** Functional magnetic resonance imaging is a significant neuroimaging tool in social science, offering insights into the brain activity associated with intricate human behaviors and decision-making.

Question 19

Archaeological analysis of *Chinese Export Porcelain* dating to the 19th century from sites in the Western Indian Ocean and Southeast Asia provides compelling evidence for the dynamics of global trade networks during this period. Studies examining ceramic sherds from locations such as Mozambique Island, Borneo, and various shipwreck cargoes, like the *Frolic* off the coast of California and the *Vung Tau* wreck, reveal distinct patterns in the types and quantities of ceramics being transported and consumed across vast distances. Blue-and-white porcelain, in particular, was a dominant commodity, reflecting both Chinese production capabilities and the widespread demand for these luxury goods in diverse markets. The presence of specific decorative styles and forms across multiple sites underscores the interconnectedness of these maritime routes and the complex economic relationships between China, European powers, and regional markets.

Which choice best states the main idea of the text?

- A** Archaeological investigation of *Chinese Export Porcelain* from the 19th century unearthed from various global locations, including maritime shipwreck sites, offers substantial insights into the scope and nature of international trade networks of that era.
- B** The prevalence of blue-and-white *Chinese Export Porcelain* in 19th-century archaeological contexts indicates that this specific type of ceramic was the most valuable commodity traded along global maritime routes.
- C** Excavations on Mozambique Island and Borneo, alongside analyses of shipwreck cargoes such as the *Frolic* and *Vung Tau*, have been the primary sources of information regarding the 19th-century *Chinese Export Porcelain* trade.
- D** The discovery of *Chinese Export Porcelain* across diverse archaeological sites in the Western Indian Ocean and Southeast Asia proves that European powers controlled the majority of the maritime

trade routes in the 19th century.

Question 20

Myotis lucifugus, the little brown bat, is a bat species widely distributed across North America. A significant threat to this species is *white-nose syndrome* (WNS), caused by the fungus *Pseudogymnoascus destructans* (Pd). WNS disrupts hibernation, leading to premature arousal, depletion of fat reserves, and often death. Studies have investigated factors influencing *M. lucifugus* survival in the presence of WNS. Research by Stuckey et al. (2021) indicated that while *M. lucifugus* populations at some sites have experienced severe declines due to WNS, other populations exhibit signs of stabilization and potential resilience. The observed stabilization may be attributed to increased annual survival rates among the remaining bats rather than immigration. This suggests that some individuals within affected populations may possess traits or face environmental conditions that enhance their ability to survive exposure to *Pseudogymnoascus destructans* and the impacts of *white-nose syndrome*.

Which choice best states the main idea of the text?

- A The fungus *Pseudogymnoascus destructans* is the sole cause of *white-nose syndrome*, a devastating disease affecting *Myotis lucifugus* populations across North America.
- B Immigration from unaffected areas is the primary reason for the observed stabilization in some *Myotis lucifugus* populations despite the widespread impact of *white-nose syndrome*.
- C Although *white-nose syndrome* has severely impacted *Myotis lucifugus* populations, there is evidence suggesting that some remaining bats are exhibiting increased survival rates, potentially due to intrinsic traits or environmental factors.
- D Research into the hibernation patterns and energy reserves of *Myotis lucifugus* is the most promising avenue for mitigating the effects of *white-nose syndrome* and ensuring the species' long-term survival.

Answers

Question 1

Correct Answer: C

The passage starts by defining cognitive bias. Then it mentions that it is studied in social science and influences judgment and decision-making, making them irrational. Finally, it gives an example of a cognitive bias. Therefore, the main idea should summarize these points. **(C)** does exactly this. **(A)** is too focused on the controversies and theoretical causes. **(B)** focuses too much on the extent of study in social science and the specific example of the halo effect. **(D)** overemphasizes the challenges in classifying biases and determining their causes.

Question 2

Correct Answer: A

The passage explains that *Myxobolus cerebralis* has a life cycle involving two hosts, a fish and a worm, and that the prevalence and severity of the disease it causes are affected by the environment and the genetics of the worm. This aligns with choice **(A)**. Choice **(B)** focuses only on the impact of the disease on fish, which is too narrow. Choice **(C)** describes a specific part of the life cycle in the worm, which is also too narrow. Choice **(D)** highlights the genetic variation in the worm, which is a detail that supports the main idea but is not the main idea itself.

Question 3

Correct Answer: C

The passage discusses how Arctic wolves survive in their harsh environment. It mentions their physical adaptations, such as their coat and

paws, and their behavioral adaptation of being nomadic hunters who follow their prey. This leads to the main idea being about the various ways Arctic wolves are adapted for survival, which is reflected in option **(C)**. Option **(A)** is too narrow, only focusing on physical adaptations. Option **(B)** focuses only on behavioral adaptations. Option **(D)** claims that dependence on migratory prey is the "most significant factor," which is not stated in the passage.

Question 4

Correct Answer: B

The passage talks about how *Brevibacillus* bacteria are found everywhere and are important to science because they can do many different things. It also says they are useful for things like helping plants and cleaning up the environment. This matches choice **(B)**. Choice **(A)** is too specific; the passage mentions industrial enzymes but also other applications. Choice **(C)** talks about understanding mechanisms, which isn't the main point of the passage. Choice **(D)** focuses too much on antimicrobial peptides and suppressing fungal diseases, when the passage discusses a wider range of capabilities.

Question 5

Correct Answer: B

The passage discusses how the study of the *Epic of Gilgamesh* has changed. It used to focus on the flood story, but now it looks at how Gilgamesh changes and what the epic says about life and death. This matches option **(B)**.
Option **(A)** is too narrow because it only talks about the early focus on the flood story and not the shift in scholarship.
Option **(C)** contradicts the passage, which states Gilgamesh transforms from a tyrannical ruler.
Option **(D)** is too narrow and places too much emphasis on one editor, implying he was the main reason for the shift in scholarly focus. The passage does not support this.

Question 6

Correct Answer: A

The passage explains that 17th-century Dutch *vanitas* still life paintings used detailed objects and symbols to remind people that life is short and material things are not important. This matches choice **(A)**. Choice **(B)** is too narrow because it only talks about the artist's skill and specific objects, not the overall message. Choice **(C)** is incorrect because it claims the sole intention was to show technical skill, ignoring the explicit mention of symbolism and moral messages. Choice **(D)** contradicts the passage, which states that the paintings encouraged reflection on the futility of material wealth, not a celebration of it.

Question 7

Correct Answer: A

The passage discusses Anne Marie Holland's analysis of the *laissez-aller* in the *Chanson de Roland*. It states that Holland argues this device, though repetitive, helped audiences remember the poem and added emotional depth. This matches choice **(A)**.
Choice **(B)** is too broad, as the passage focuses specifically on the *laissez-aller* and not a variety of devices.
Choice **(C)** is too narrow, focusing only on the audience's reliance and not Holland's analysis or the device's dual function.
Choice **(D)** contradicts the passage, which describes the device as sophisticated and enhancing impact, not indicating limited capacity or straightforward processes.

Question 8

Correct Answer: A

The passage discusses how complex social phenomena are difficult to study. It explains that social scientists use many different ways to study how

people and society affect each other. The main idea is that studying these complex things is hard and needs different methods to understand how individuals and society interact. **(A)** matches this idea. **(B)** is wrong because the passage mentions various approaches, not just quantitative ones. **(C)** is wrong because the passage states there is a diversity of theoretical approaches, not a single one. **(D)** is wrong because the passage highlights the *reciprocal* relationship between individuals and social forces, not that individual agency is the sole determinant.

Question 9

Correct Answer: B

The passage discusses how *Dendrobates tinctorius* uses unusual communication methods compared to other frogs. It states that while most frogs use sounds, this specific frog uses visual and touch signals instead. The main idea is that *Dendrobates tinctorius* communicates differently. **(B)** matches this idea by saying the frog uses visual and touch signals instead of the usual sound signals. **(A)** is incorrect because the passage says there is a "reduction" in calls, not a complete loss. **(C)** is incorrect because while the frog is visually striking, the passage focuses on communication, not defense against predators. **(D)** is incorrect because the passage does not say the reduced vocalizations are harmful or negatively impact the frog.

Question 10

Correct Answer: C

The passage discusses the idea of residential self-selection. It states that people choose where to live based on who they are and what they want to access. This choosing where to live affects how different groups of people are spread out in cities and leads to unequal distribution of resources.

(A) is incorrect because the passage emphasizes individual residential choices, not historical industrial patterns, as the primary driver of spatial distribution.
(B) is incorrect because the

passage presents Dr. Vance's research as an example supporting the concept, not the first evidence of it.
(D) is incorrect because the passage explicitly states that residential self-selection reinforces neighborhood-level resource disparities.

Question 11

Correct Answer: D

The passage states that ants are ecosystem engineers and that they change the soil around their nests. It also mentions research on species like *Formica aquilonia* and *Solenopsis invicta* as examples of this. The main idea is that ants significantly alter soil properties as ecosystem engineers. (D) matches this prediction by mentioning ants as ecosystem engineers and their modification of soil characteristics, using the given ant species as examples. (A) is too narrow because it only focuses on nutrient increase due to foraging. (B) is too narrow because it only focuses on physical restructuring. (C) is too broad and not fully supported as the passage focuses on soil changes, not the consequences on plant life and microbial populations.

Question 12

Correct Answer: B

The passage discusses how historical studies of the Black Death's effect on art focused on death and sadness. However, it then introduces newer research, like that by Dr. Eleanor Wainwright, which looked at different art forms and found themes of hope and community too. This means the main idea is that the artistic response was more varied than thought before, including positive themes. (B) states this clearly. (A) is wrong because it only mentions the old, limited view. (C) is too strong; the passage says the new research suggests a *more nuanced* view, not a complete overturn of all previous understanding. (D) is wrong because it says illuminated manuscripts and church architecture are the *only* reliable sources, which the

passage does not claim.

Question 13

Correct Answer: D

The passage is about Dr. Alistair Black's book which looks at how British public libraries changed from 1914 to 2000 because of changes in society. The book shows that even though libraries changed, they stayed important social places.

(A) is incorrect because the passage says the book looks at many things, not just buildings and money.
(B) is incorrect because the passage says the libraries changed a lot, they were not consistent and unchanging.
(C) is incorrect because the passage mentions digital technology as one challenge, but not the most significant one, and the book covers a longer period and other changes.
(D) is correct because it says the book is a history of how libraries changed with society and stayed important, which matches the main point of the passage.

Question 14

Correct Answer: A

The passage introduces Luca Pacioli's book *De Divina Proportione* and describes its contents. It states that the book discusses the golden ratio's mathematical and artistic applications and architectural proportions, linking mathematics and art during the Renaissance. Therefore, the main idea is that Pacioli's book explored these concepts and influenced the Renaissance.

(A) correctly summarizes this main idea.
(B) is too narrow; while the collaboration is mentioned, it's not the main focus.
(C) is also too narrow; it focuses only on the second part of the book and doesn't encompass the discussion of the golden ratio.
(D) is incorrect because the passage doesn't state that the book provides a detailed historical account of the golden ratio's use in classical architecture.

Question 15

Correct Answer: A

The passage talks about the art of the Yoruba people. It says their art is connected to their religion and used in ceremonies. It also says their art is not just pretty but has a purpose. The main idea is about how Yoruba art is many things and is important in their religion and daily life. **(A)** says that Yoruba art has many parts and is connected to their spiritual beliefs and used in ceremonies and has a purpose. This matches the main idea. **(B)** is wrong because it says the art is mainly about beauty, but the passage says it has other important uses. **(C)** is wrong because it focuses too much on the *Ifá* literary corpus, which is only one part of the passage. **(D)** is wrong because it says the main role is to honor leaders and history, but the passage focuses more on the spiritual and ceremonial uses.

Question 16

Correct Answer: B

The passage discusses reciprocal altruism, noting that it was initially thought to be only in humans, but studies on non-human primates like *Macaca mulatta* and *Pan troglodytes* show it exists in these animals. The main idea is that research has found reciprocal altruism in these primate species, challenging the idea that it is only a human behavior. **(B)** states this clearly. **(A)** is wrong because the passage does not say reciprocal altruism is absent in other species, only that it has been shown in *Macaca mulatta* and *Pan troglodytes*. **(C)** is incorrect because the passage states these behaviors *cannot* be fully explained by kin selection or mutualism alone. **(D)** contradicts the passage, which presents evidence *demonstrating* the presence of reciprocal altruism in these primates, not that it is still highly debated.

Question 17

Correct Answer: B

The passage is about how finding Greek pottery in many places shows that ancient Greeks traded a lot with others and shared their culture and art. It also mentions that this pottery is strong and helps us learn about old trade routes.

(A) is wrong because the passage talks about trade networks and cultural exchange, not colonization.
(C) is wrong because while the passage mentions that pottery's durability is helpful for archaeologists, this is a detail, not the main idea.
(D) is wrong because the passage mentions stylistic evolution as a result of interaction, but the main focus is on the trade networks and exchange, not just the artistic changes.
(B) is the best answer because it captures the main point that the pottery's distribution reveals the complex trade and cultural connections of the ancient Greek world.

Question 18

Correct Answer: D

The passage is about how fMRI is used in social science to understand complex human behaviors and decision-making. It gives an example of a study that used fMRI to look at buying decisions. The main idea is that fMRI is an important tool for studying these things.

(A) is incorrect because the passage focuses on complex human behaviors, not basic sensory perception and motor control.
(B) is incorrect because the passage states that fMRI is a valuable tool and provides insights, indicating it is not untested or limited.
(C) is incorrect because the passage mentions the Knutson et al. study as an instance of fMRI's use, not as the single most important study.
(D) correctly summarizes the main idea of the passage, stating that fMRI is a significant tool for understanding complex human behaviors and decision-making in social science.

Question 19

Correct Answer: A

The passage discusses how studying Chinese Export Porcelain from different places like Mozambique Island and shipwrecks helps us learn about global trade in the 1800s. It mentions the types of ceramics found and how they show connections between different parts of the world. This matches the idea that archaeological study of these ceramics shows us a lot about the trade networks of that time.

(B) is too focused on just one type of porcelain (blue-and-white) and claims it was the most valuable, which isn't stated as the main point.

(C) is too narrow because it only lists specific locations and shipwrecks as the *primary* sources, while the passage talks about "various global locations."

(D) makes a claim about European powers controlling trade routes, which is not directly supported as the main idea by the passage's focus on the ceramics themselves and the general interconnectedness of routes.

Question 20

Correct Answer: C

The passage introduces *Myotis lucifugus* and the threat of *white-nose syndrome*. It then discusses research indicating that while some populations have declined, others show signs of stabilization, possibly due to increased survival rates among remaining bats, suggesting certain factors might enhance their ability to survive the disease. Therefore, the main idea is that despite the negative impact of WNS, some *Myotis lucifugus* are surviving at higher rates, pointing to potential resilience.

(A) is too narrow as it focuses only on the cause of WNS and its general impact, not the nuanced survival patterns discussed.

(B) is contradicted by the passage, which states stabilization may be due to increased survival, not immigration.

(D) is too specific, focusing on research avenues rather than the observed phenomenon of potential resilience in some bat populations.