

Information and Ideas

Question 1

The beetle genus *Stenus* (Coleoptera: Staphylinidae) is known for its remarkable predatory behavior, particularly its ability to capture fast-moving prey such as springtails (Collembola). Unlike many predatory insects that rely on speed or brute force, adult *Stenus* beetles possess a highly specialized and rapid prey-capture apparatus: a protrusible labium. This elongated lower lip can be rapidly extended towards prey using hydrostatic pressure from hemolymph, and its tip is equipped with adhesive pads. Upon contact, the sticky paraglossae at the labium's tip adhere to the prey, which is then quickly drawn back to the beetle's mandibles for mastication and pre-oral digestion. This unique mechanism allows *Stenus* beetles to effectively catch elusive prey.

Which choice best states the main idea of the text?

- A** The beetle genus *Stenus* has evolved a defense mechanism involving adhesive pads on its labium to deter predators.
- B** The adhesive pads located on the paraglossae of the *Stenus* beetle's labium are primarily used for locomotion on various surfaces.
- C** Adult beetles of the genus *Stenus* utilize a specialized, rapidly extendable labium with adhesive structures to capture swift prey like springtails.
- D** The hydrostatic pressure of hemolymph in *Stenus* beetles is exclusively used for extending the labium during prey capture, not for other physiological processes.

Question 2

The Theory of Planned Behavior (TPB), proposed by Icek Ajzen in 1991, is a prominent psychological framework used to understand and predict human behavior. TPB posits that an individual's intention to perform a particular behavior is the most immediate determinant of whether they will actually perform that behavior. This intention, in turn, is shaped by three key factors: the individual's attitude toward the behavior, their subjective norms regarding the behavior, and their perceived behavioral control over performing the behavior. Attitude refers to a person's positive or negative evaluation of the behavior. Subjective norms involve the perceived social pressure to engage in or refrain from the behavior. Perceived behavioral control relates to the perceived ease or difficulty of performing the behavior, encompassing beliefs about resources and opportunities.

Which choice best states the main idea of the text?

- A** Icek Ajzen's 1991 Theory of Planned Behavior is the most influential psychological model for predicting all types of human social behavior, according to various indices of scientific impact.
- B** The Theory of Planned Behavior is a psychological model that explains how an individual's intention to perform a behavior is directly influenced by their attitude toward the behavior, subjective norms, and perceived behavioral control.
- C** While the Theory of Planned Behavior is widely used to predict health-related behaviors and consumer decisions, it has limitations in predicting routinized social networking site use behaviors.
- D** The three factors influencing behavioral intention in the Theory of Planned Behavior—attitude, subjective norms, and perceived behavioral control—are equally important in determining an individual's intention to perform a behavior.

Question 3

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 4

The Adventures of Huckleberry Finn is an 1884 novel by Mark Twain. In the novel, Twain portrays the character of Jim, an enslaved man, as possessing a capacity for creative embellishment that transforms his personal experiences into a source of prestige and authority among his peers, writing _____

Which quotation from *The Adventures of Huckleberry Finn* most effectively illustrates the claim?

- A "When they got aboard the king went for me, and shook me by the collar, and says: 'Tryin' to give us the slip, was ye, you pup! Tired of our company, hey?' I says: 'No, your majesty, we warn't—please don't, your majesty!'"
- B "And next time Jim told it he said they rode him down to New Orleans; and, after that, every time he told it he spread it more and more, till by and by he said they rode him all over the world, and tired him most to death... Jim was monstrous proud about it, and he got so he wouldn't hardly notice the other niggers."
- C "The old gentleman's eyes blazed a minute—'twas pleasure, mainly, I judged—then his face sort of smoothed down, and he says, kind of gentle: 'I don't like that shooting from behind a bush. Why didn't you step into the road, my boy?'"
- D "'Well, this is too many for me, Jim. I hain't seen no fog, nor no islands, nor no troubles, nor nothing. I been setting here talking with you all night till you went to sleep about ten minutes ago... You could'n'a got drunk in that time, so of course you've been dreaming.'"

Question 5

A study on *Acinonyx jubatus*, or cheetahs, utilizing miniaturized data loggers attached to free-ranging individuals, investigated their hunting dynamics and how these dynamics relate to chasing different prey sizes. The research measured fine-scale movement, speed, and acceleration. While cheetahs achieved high hunting speeds and significant acceleration, the study revealed that their chases don't consist solely of simple high-speed sprints. Instead, the interplay between forward and lateral acceleration during chases indicated that the total forces involved in speed changes and turning were approximately constant over time but varied with prey type. This suggests a more nuanced hunting strategy than previously assumed, involving modulation of speed to facilitate rapid turns.

Which choice best states the main idea of the text?

- A** The *Acinonyx jubatus* utilizes a hunting strategy that relies primarily on achieving the maximum possible speed to quickly overtake prey, as evidenced by data from miniaturized data loggers.
- B** Miniaturized data loggers are an effective tool for studying the hunting behavior of free-ranging *Acinonyx jubatus*, providing detailed information about their movement, speed, and acceleration.
- C** Research using miniaturized data loggers on *Acinonyx jubatus* indicates that their hunting strategy is more complex than simply high-speed chasing, involving adjustments in speed and turning based on prey.
- D** The study of *Acinonyx jubatus* hunting dynamics revealed that the forces involved in speed changes and turning remain constant during a chase, regardless of the type of prey being pursued.

Question 6

A recent study by psychologist Jean-François Bonnefon and colleagues investigated the psychological factors influencing individuals' acceptance of autonomous vehicles, specifically focusing on the ethical dilemma known as the "trolley problem." This thought experiment presents a scenario where a vehicle must choose between two harmful outcomes, and the study aimed to understand public perception of how an autonomous vehicle should be programmed to react. Bonnefon's research, published in a 2016 article in *Science*, utilized a series of surveys presenting different variations of this ethical quandary to a large sample of participants. The findings revealed a complex and somewhat contradictory public attitude: participants generally agreed that autonomous vehicles should be programmed to minimize harm, even if it meant sacrificing the vehicle's occupants, yet they also indicated a preference for purchasing vehicles programmed to protect their own passengers.

Which choice best states the main idea of the text?

- A** Research by Jean-François Bonnefon and colleagues demonstrates that people are uncomfortable with the idea of autonomous vehicles making life-or-death decisions in hypothetical scenarios, revealing a general distrust of artificial intelligence in complex situations.
- B** The "trolley problem" is a long-standing philosophical dilemma that has significant implications for the programming of autonomous vehicles, and Bonnefon et al.'s work is the first empirical study to explore public opinion on this specific application of the problem.
- C** A study by Jean-François Bonnefon and colleagues explored public opinion on the ethical programming of autonomous vehicles when faced with unavoidable harm, uncovering a conflict between the desire for autonomous vehicles to minimize casualties and the preference for personal safety.
- D** While Jean-François Bonnefon and colleagues' study in *Science* provides valuable insights into public attitudes toward the ethics of

autonomous vehicles, it is limited by its reliance on survey data and hypothetical scenarios rather than real-world experimental data.

Question 7

The advertisement call of the spring peeper (*Pseudacris crucifer*) is a crucial component of its reproductive strategy, primarily functioning in mate attraction. Research indicates that the temporal and spectral attributes of these calls are subject to variation influenced by a confluence of environmental factors. Studies have shown that ambient temperature significantly impacts calling behavior, exhibiting an inverse relationship with call duration and a positive correlation with call rate. Furthermore, experimental investigations have demonstrated that exposure to various types of acoustic interference, including conspecific and anthropogenic noise, can lead to modifications in the structure of the *Pseudacris crucifer* advertisement call, such as alterations in duration and peak frequency, suggesting a capacity for phenotypic plasticity in vocalization in response to environmental conditions.

Which choice best states the main idea of the text?

- A** The advertisement call of the spring peeper (*Pseudacris crucifer*) is solely determined by genetic factors, ensuring consistent mate attraction signals across diverse environmental conditions.
- B** Temperature is the only environmental variable that influences the call characteristics of the spring peeper (*Pseudacris crucifer*), affecting both call duration and call rate in a predictable manner.
- C** The vocalization patterns, specifically the advertisement call attributes, of the spring peeper (*Pseudacris crucifer*) are significantly shaped by a combination of environmental variables, including temperature and various forms of acoustic interference.
- D** While the advertisement call of the spring peeper (*Pseudacris crucifer*) is important for reproduction, the specific ways in which environmental factors like temperature and acoustic interference influence call structure and timing remain largely unknown and require extensive future research.

Question 8

Tardigrades, also known as water bears or moss piglets, are microscopic metazoans renowned for their extraordinary ability to survive extreme environmental conditions through a state of suspended animation known as cryptobiosis. This ametabolic state allows them to tolerate desiccation, freezing, radiation, vacuum, and pressure extremes that would be lethal to most other life forms. During anhydrobiosis, a form of cryptobiosis induced by dehydration, tardigrades contract into a desiccated form called a tun, expelling nearly all intracellular water. This remarkable desiccation tolerance is partly attributed to the synthesis of intrinsically disordered proteins, such as cytoplasmic-abundant heat-soluble (CAHS) proteins, and the sugar trehalose, which help protect cellular structures. Beyond anhydrobiosis, tardigrades can also enter other cryptobiotic states, including cryobiosis (in response to cold), osmobiosis (in response to high osmotic pressure), and anoxybiosis (in response to lack of oxygen), further highlighting their exceptional resilience.

Which choice best states the main idea of the text?

- A** Tardigrades are exceptionally resilient microscopic metazoans that survive extreme environmental conditions by entering a state of suspended animation called cryptobiosis, facilitated by various physiological and molecular adaptations including the formation of a tun and the action of specific proteins like cytoplasmic-abundant heat-soluble proteins and the sugar trehalose.
- B** The formation of a tun during anhydrobiosis is the primary mechanism by which tardigrades survive extreme dehydration, a process that involves the expulsion of intracellular water and is crucial for their ability to tolerate environments with limited water availability.
- C** While tardigrades are known for surviving extreme conditions like radiation and the vacuum of space through cryptobiosis, the specific molecular mechanisms, such as the function of cytoplasmic-abundant heat-soluble proteins and the role of trehalose, are still not fully

understood by scientists.

- D Cryptobiosis, a state of suspended animation involving minimal metabolic activity, is a unique survival strategy employed by

tardigrades, allowing them to tolerate a wide range of unfavorable conditions including cryobiosis, osmobiosis, and anoxybiosis, in addition to the more commonly studied anhydrobiosis.

Question 9

Cognitive reappraisal, an emotion regulation strategy where individuals reinterpret a situation to alter its emotional impact, has been widely studied for its effects on emotional well-being. While research consistently demonstrates that cognitive reappraisal can be effective in reducing negative emotions, recent studies emphasize the crucial role of social context. Specifically, the effectiveness of cognitive reappraisal is not uniform and can be significantly modulated by the interpersonal environment in which it is applied. For instance, studies on adolescents with early-stage borderline personality disorder suggest that cognitive reappraisal may be less effective in contexts of social rejection compared to neutral social situations. Furthermore, the availability of social support has been shown to influence the spontaneous use and effectiveness of cognitive reappraisal.

Which choice best states the main idea of the text?

- A** Research into cognitive reappraisal demonstrates its consistent effectiveness across various emotional situations in reducing negative emotional responses.
- B** The effectiveness of cognitive reappraisal as an emotion regulation strategy is significantly influenced by the social context in which it is employed.
- C** Studies focusing on adolescents with early-stage borderline personality disorder reveal that cognitive reappraisal is ineffective in all social situations for this population.
- D** While social support can impact the frequency with which individuals utilize cognitive reappraisal, it does not alter the strategy's inherent effectiveness.

Question 10

Macrocystis pyrifera, also known as giant kelp, thrives in temperate coastal regions and forms extensive underwater forests. Its remarkable growth rate is significantly influenced by the availability of dissolved nitrogen, a crucial nutrient. While nitrate is a primary source of nitrogen for many plants, studies have shown that *Macrocystis pyrifera* can also effectively utilize urea, another form of dissolved nitrogen found in coastal upwelling zones. This ability to use multiple nitrogen sources, including urea which may be more consistently available than nitrate in certain conditions, contributes to the giant kelp's ability to maintain substantial growth throughout the year, even when nitrate concentrations are low. Furthermore, the physical environment, such as water motion, can influence the uptake of these essential nutrients by *Macrocystis pyrifera*.

Which choice best states the main idea of the text?

- A** *Macrocystis pyrifera*, commonly known as giant kelp, exhibits a remarkable ability to sustain high growth rates by utilizing various dissolved nitrogen sources, including urea, which supplements its nitrogen uptake when the availability of nitrate is limited.
- B** The growth rate of *Macrocystis pyrifera*, or giant kelp, is solely dependent on the concentration of nitrate in the surrounding water, and the physical environment has little to no impact on its nutrient uptake.
- C** Research on *Macrocystis pyrifera* has primarily focused on identifying the optimal water temperature for its growth, with less emphasis placed on its nutritional requirements, particularly its uptake of dissolved nitrogen compounds like urea and nitrate.
- D** While *Macrocystis pyrifera* can utilize both nitrate and urea as nitrogen sources, the passage primarily emphasizes the critical role of nitrate concentration as the sole determinant of its ability to maintain substantial growth throughout the year in temperate coastal regions.

Question 11

The naked mole-rat (*Heterocephalus glaber*), a subterranean rodent native to East Africa, exhibits a complex social structure characterized by eusociality, a rare trait among mammals. A single breeding female, known as the queen, and one to three breeding males are responsible for reproduction within the colony. The majority of individuals are non-reproductive workers who perform various tasks such as foraging, burrow maintenance, and cooperative care of the young. This reproductive division of labor and overlap of generations contribute to the colony's success in a challenging environment. Studies, such as those by Jarvis in 1981 and Brett in 1991, have detailed the intricate organization of these colonies and the specialized roles of different individuals within the naked mole-rat social system.

Which choice best states the main idea of the text?

- A** The reproductive success of the naked mole-rat (*Heterocephalus glaber*) is solely dependent on the queen and breeding males, with workers contributing only negligibly to the perpetuation of the species.
- B** Unlike other mammals, the naked mole-rat (*Heterocephalus glaber*) has evolved a unique social system involving specialized castes and cooperative behaviors that enhance its survival in its specific ecological niche.
- C** The challenging subterranean environment of East Africa is the primary selective pressure that led to the evolution of eusociality and the complex social structure observed in the naked mole-rat (*Heterocephalus glaber*).
- D** The naked mole-rat (*Heterocephalus glaber*) is a mammalian species that exhibits eusociality, characterized by a specific reproductive structure and division of labor among colony members, as documented by researchers.

Question 12

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 13

Archaeological investigations into ancient burial practices have unearthed significant material culture that provides profound insights into the symbolic frameworks and eschatological beliefs of past societies. For instance, the detailed analysis of grave goods accompanying *Homo sapiens* remains from the Upper Paleolithic period, particularly those found in the Sunghir site in Russia, reveals intricate symbolic expressions associated with death and the afterlife. The presence of elaborate personal adornments, such as mammoth-ivory beads, and strategically placed ochre pigments suggests a complex understanding of the transition from life to death and perhaps a belief in some form of continuation or transformation beyond physical existence. These findings underscore the capacity of material culture recovered through meticulous archaeological excavation to illuminate the intangible aspects of ancient human thought and cosmology.

Which choice best states the main idea of the text?

- A** The excavation of *Homo sapiens* remains at the Sunghir site in Russia is the most important archaeological discovery for understanding Upper Paleolithic symbolic behavior.
- B** Ancient burial sites often contain grave goods and pigments that are challenging for archaeologists to interpret due to the lack of written records from the Upper Paleolithic period.
- C** Material culture, such as elaborate personal adornments and strategically placed ochre pigments, found in ancient burial sites serves primarily to indicate the social status of individuals in past societies.
- D** The material culture discovered through the archaeological analysis of ancient burial practices offers valuable insights into the symbolic beliefs and ideas about death held by past human populations.

Question 14

Jessica Wolfe's 2019 book, *Homer and the Question of Strife from Erasmus to Hobbes*, examines how Renaissance readers interpreted Homer's epics, the *Iliad* and the *Odyssey*, particularly through the lens of *eris*, the Greek word for strife, conflict, or discord. Given the era's significant religious and civil conflicts, Wolfe posits that these readers turned to Homer to understand the endemic strife of their own time. While other classical works were also viewed through a contemporary lens, Homer's epics were notably more widely read as "fables of discord" with potent relevance to current events, providing a shared vocabulary to describe and analyze conflict. Though interpretations of specific events varied among readers, the overarching method of relating contemporary struggles to Homeric narratives was a common approach during the Renaissance.

Which choice best states the main idea of the text?

- A** Jessica Wolfe's *Homer and the Question of Strife from Erasmus to Hobbes* argues that the *Iliad* and the *Odyssey* were the only classical works read during the Renaissance by individuals seeking to understand the prevalent religious and civil conflicts of their time.
- B** Renaissance readers primarily focused on the allegorical meanings of the *Odyssey*, as detailed in Jessica Wolfe's 2019 book, *Homer and the Question of Strife from Erasmus to Hobbes*, using it as a guide for personal spiritual journeys and overcoming individual obstacles.
- C** According to Jessica Wolfe's 2019 book, *Homer and the Question of Strife from Erasmus to Hobbes*, Renaissance readers frequently interpreted Homer's epics, the *Iliad* and the *Odyssey*, through the concept of *eris* (strife) to analyze and discuss the contemporary religious and civil conflicts they were experiencing.
- D** Jessica Wolfe's 2019 book, *Homer and the Question of Strife from Erasmus to Hobbes*, suggests that while Renaissance readers found some relevance in Homer's epics, they generally preferred other ancient texts for understanding the complex political landscape and

philosophical debates of their period.

Question 15

Certain fungi belonging to the genus *Archaeorhizomyces*, particularly *Archaeorhizomyces maximus*, are frequently found in soil environments and associated with the roots of various plants. While their exact ecological roles are still under investigation, recent studies suggest that these fungi may play a significant role in nutrient cycling within ecosystems. One notable characteristic observed is their potential involvement in the mobilization of phosphorus from organic and inorganic soil pools, making this essential nutrient more accessible to plants. Additionally, there is evidence suggesting a possible interaction with soil bacteria, which could further influence nutrient transformations and overall soil health. The ubiquitous presence of *Archaeorhizomyces maximus* in diverse soil types indicates a broad ecological adaptability and potential importance in a wide range of terrestrial habitats.

Which choice best states the main idea of the text?

- A** The *Archaeorhizomyces* genus, and specifically *Archaeorhizomyces maximus*, has been conclusively proven to enhance plant growth by directly providing phosphorus from soil organic pools.
- B** Fungi of the genus *Archaeorhizomyces*, particularly *Archaeorhizomyces maximus*, are common in soils and appear to have an important, though not fully understood, role in nutrient cycling and soil health.
- C** The widespread distribution of *Archaeorhizomyces maximus* is primarily due to its unique ability to interact with soil bacteria, a characteristic not found in other soil fungi.
- D** Recent research on *Archaeorhizomyces maximus* has definitively mapped all its ecological roles and interactions within various terrestrial ecosystems, leaving no further avenues for investigation.

Question 16

Marine Style pottery, a hallmark of Minoan civilization (circa 2700–1450 BCE) on the island of Crete, is renowned for its intricate depictions of marine life such as octopuses, dolphins, and seashells, demonstrating the Minoans' deep connection to the sea and their advanced artistic skills. This style flourished during the Late Minoan IA period (circa 1550–1450 BCE) and is characterized by its naturalistic and dynamic representations, often covering the entire surface of the vessel. Although the Mycenaean civilization (circa 1600–1100 BCE) on mainland Greece later adopted and adapted Minoan pottery styles, including marine motifs, their interpretations tended to be more stylized and less fluid than the original Minoan creations. The widespread discovery of *Marine Style* pottery at various sites throughout the Aegean and Eastern Mediterranean regions indicates extensive trade networks and cultural exchange established by the Minoans, disseminating their artistic influence across a vast geographical area.

Which choice best states the main idea of the text?

- A** The naturalistic and dynamic representations of marine life on Minoan *Marine Style* pottery highlight the Minoans' advanced artistic skills and their reverence for the sea.
- B** Minoan *Marine Style* pottery, known for its detailed marine life depictions, exemplifies the civilization's artistic sophistication and its significant cultural impact through extensive trade networks.
- C** The adaptation of Minoan pottery styles, including marine motifs, by the Mycenaean civilization resulted in interpretations that were more stylized and less fluid than the original Minoan creations.
- D** The widespread discovery of *Marine Style* pottery throughout the Aegean and Eastern Mediterranean regions is the primary evidence for the extensive trade networks and cultural exchange established by the Minoans.

Question 17

The butterfly *Bicyclus anynana* exhibits striking seasonal polyphenism, a phenomenon where the same genotype produces different phenotypes in response to environmental cues, specifically temperature. During the warm, wet season, individuals develop large eyespots on their wings, which serve as a defense against predation. Conversely, cooler temperatures and drier conditions trigger the development of a dry-season form with greatly reduced eyespots and a more cryptic, uniform brown coloration. This phenotypic plasticity is a result of changes in developmental pathways, particularly those related to the melanization process that contributes to eyespot formation and overall wing pigmentation, influenced by fluctuating hormone levels.

Which choice best states the main idea of the text?

- A The fluctuating hormone levels in *Bicyclus anynana* butterflies are the sole factor responsible for the significant differences observed in the melanization process contributing to eyespot formation and overall wing pigmentation, leading to their seasonal polyphenism.
- B The butterfly *Bicyclus anynana* serves as a compelling example of seasonal polyphenism, showcasing how environmental temperature variations during development dictate distinct wing color patterns and eyespot sizes by influencing underlying biological processes like melanization and hormone levels.
- C The large eyespots on the wings of the wet-season form of the *Bicyclus anynana* butterfly are the primary defense mechanism against predation, highlighting the evolutionary pressures that favor the development of prominent eyespots in warmer and wetter conditions.
- D The cryptic, uniform brown coloration of the dry-season form of the *Bicyclus anynana* butterfly, which results from reduced eyespots and altered melanization processes, is a more effective camouflage strategy in cooler, drier environments compared to the conspicuous eyespots of the wet-season form.

Question 18

The *Epic of Gilgamesh*, an ancient Mesopotamian heroic narrative, is widely recognized as one of the earliest surviving significant works of literature, with Sumerian precursors dating back to the Third Dynasty of Ur (circa 2100 BCE). The most complete version, compiled by Sîn-lēgi-urtašma in the 13th and 10th centuries BCE, presents profound explorations of universal human themes such as the inevitability of mortality, the complexities of friendship, the pursuit of fame, and the human struggle for meaning in existence. Despite originating in antiquity, its narrative structures and thematic content have exerted a demonstrable influence on subsequent literary traditions and philosophical thought across various cultures, a phenomenon evidenced by the presence of similar motifs and existential inquiries in later works. The persistent study and translation of the *Epic of Gilgamesh* by scholars underscores its enduring cultural and literary importance.

Which choice best states the main idea of the text?

- A** The *Epic of Gilgamesh's* exploration of the inevitability of mortality distinguishes it from later heroic narratives that often present more optimistic views on the afterlife.
- B** While various fragmented versions of the *Epic of Gilgamesh* exist, the most complete and influential compilation was meticulously assembled by the scribe Sîn-lēgi-urtašma in the 13th and 10th centuries BCE, after the initial Sumerian poems.
- C** As one of the earliest known comprehensive literary works, the *Epic of Gilgamesh* is significant for its early examination of fundamental human concerns and its lasting impact on subsequent literary and philosophical developments.
- D** The academic focus on translating and studying the *Epic of Gilgamesh* primarily stems from its detailed depiction of ancient Mesopotamian religious beliefs, social structures, and daily life during the Third Dynasty of Ur.

Question 19

A recent study by researchers, including Dr. Anya Sharma and Dr. Jian Li (2023), investigated the impact of prolonged exposure to excessive online information, specifically the phenomenon of information overload, on the cognitive functions of young adults aged 18-25. The study, utilizing a mixed-methods approach combining neuroimaging data and self-report questionnaires, revealed significant negative correlations between high levels of reported information overload and performance on standardized tests measuring executive functions, particularly inhibitory control and working memory capacity. Furthermore, qualitative data from the self-report questionnaires indicated increased self-perceived stress levels and difficulties in decision-making among participants experiencing higher degrees of information overload. These findings contribute to a growing body of literature concerning the detrimental effects of the modern digital environment on cognitive well-being.

Which choice best states the main idea of the text?

- A** Research indicates that young adults subjected to substantial quantities of online information demonstrate reduced executive functions and heightened self-perceived stress and difficulties in decision-making.
- B** The study by Dr. Anya Sharma and Dr. Jian Li is groundbreaking in its use of neuroimaging techniques to measure the cognitive impacts of excessive online information on the prefrontal cortex of young adults.
- C** Information overload is a recently identified phenomenon that disproportionately affects the working memory capacity and inhibitory control of individuals between the ages of 18 and 25, according to a 2023 study.
- D** While there is a growing body of literature on the negative effects of the modern digital environment, the recent study definitively proves a causal link between excessive online information and impaired cognitive functions in young adults.

Question 20

In the Middle Ages, the dissemination of texts was largely dependent on scribes, who painstakingly copied manuscripts by hand. This process was fraught with potential for alteration, both accidental and intentional. Accidental errors could arise from fatigue, misreading the exemplar (the text being copied), or simple slips of the pen. Intentional changes might stem from a scribe's desire to correct perceived errors in the exemplar, harmonize different versions of a text, or even subtly alter the content to align with their own beliefs or the prevailing views of their scriptorium or patron. These modifications, whether conscious or unconscious, contributed to the textual variability observed in medieval manuscripts and present significant challenges for modern scholars attempting to reconstruct original works.

Which choice best states the main idea of the text?

- A** Medieval scribes were highly educated individuals responsible for preserving classical and religious works, often working in monastic scriptoria.
- B** The meticulous process of hand-copying manuscripts in the Middle Ages, while time-consuming, ensured the accurate transmission of important literary, scientific, and philosophical texts.
- C** Textual transmission in the Middle Ages was a dynamic process influenced by the choices and errors of scribes, resulting in variations among manuscripts that complicate modern scholarly analysis.
- D** The development of illuminated manuscripts in the Middle Ages demonstrates the artistic skill of scribes and illuminators, who transformed simple texts into valuable works of art.

Answers

Question 1

Correct Answer: C

The passage describes how *Stenus* beetles catch prey using a special mouthpart called a labium that shoots out quickly and has sticky pads. This helps them catch fast bugs like springtails. The main idea is about this unique hunting method.

(A) is wrong because the passage talks about catching prey, not defense.

(B) is wrong because the passage says the sticky pads are for catching prey, not for moving around.

(D) is wrong because the passage only mentions hemolymph pressure for extending the labium and doesn't say it's the *only* use.

Question 2

Correct Answer: B

The passage describes the Theory of Planned Behavior and its main components. It states that the theory predicts behavior based on intention, which is influenced by attitude, subjective norms, and perceived behavioral control. This aligns with choice (B). Choice (A) is too extreme because the passage does not claim it is the *most* influential for *all* types of behavior, nor does it discuss indices of scientific impact. Choice (C) introduces information about specific applications and limitations that are not present in the passage. Choice (D) claims the three factors are *equally* important, which is not stated in the passage; their relative importance can vary.

Question 3

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 4

Correct Answer: B

(B) is the correct answer as it directly illustrates Jim's tendency to exaggerate his story ("spread it more and more") and how this creative storytelling elevates his social standing ("monstrous proud," "wouldn't hardly notice the other niggers").

(A) describes an interaction between Huck and the "king," focusing on fear and domination rather than Jim's storytelling or prestige.

(C) depicts a scene involving the Grangerfords and Shepherdsons, illustrating a code of honor in a feud, not Jim's creativity or authority.

(D) involves Huck trying to trick Jim into believing reality was a dream; while it involves storytelling, it highlights Huck's deception rather than Jim's own authoritative embellishment.

Question 5

Correct Answer: C

The passage talks about a study using data loggers to learn about how cheetahs hunt. It says that cheetahs are fast, but they don't just run in a straight line at top speed. They change their speed and turn to catch their prey. The main idea is that their hunting is more complex than just running fast.

(A) is wrong because the passage says their hunting is not *primarily* about maximum speed.

(B) is too narrow; it only talks about the tool used, not what was discovered about cheetahs.

(D) is wrong because the passage states the forces *varied* with prey type, not remained constant.

(C) correctly captures that the study showed a more complex hunting strategy involving speed adjustments and turning based on prey.

Question 6

Correct Answer: C

The passage talks about a study by Jean-François Bonnefon and colleagues about how people think autonomous vehicles should act in tough ethical situations. The study found that people want the vehicles to save the most lives, but they also want their own car to protect them. This shows a conflict in what people want. (A) is wrong because the study focused on specific ethical choices, not a general discomfort with AI. (B) is wrong because the passage doesn't say this was the *first* study on this topic. (D) is wrong because the passage describes the study's findings, not a critique of its methods. (C) accurately captures the main point that the study found conflicting public opinions on how autonomous vehicles should be programmed in ethical dilemmas.

Question 7

Correct Answer: C

The passage discusses how the advertisement call of the *Pseudacris crucifer* is influenced by environmental factors. It mentions temperature affecting call duration and rate, and noise affecting call structure. Therefore, the main idea is that the vocalization patterns are shaped by environmental variables.

(A) is incorrect because the passage states that environmental factors influence calls, contradicting the idea that only genetic factors are involved.

(B) is incorrect because the passage explicitly mentions both temperature and acoustic interference as influential factors, not just temperature.

(D) is incorrect because the passage describes specific ways temperature and noise affect calls, indicating that these influences are at least partially understood.

Question 8

Correct Answer: A

The passage describes tardigrades and their ability to survive extreme conditions by entering cryptobiosis. It also explains some of the ways they achieve this, like forming a tun and using special proteins and sugars. (A) covers all these points: tardigrades are resilient, they use cryptobiosis to survive extremes, and this is helped by adaptations like the tun, CAHS proteins, and trehalose. (B) is too narrow; it only focuses on anhydrobiosis and the tun. (C) mentions that mechanisms are not fully understood, which is not the main point of this passage, and also brings up radiation and space which are details, not the main idea. (D) lists different types of cryptobiosis but doesn't fully encompass the explanation of *how* they survive, which is a key part of the passage.

Question 9

Correct Answer: B

The passage is about how well cognitive reappraisal works. It says that while cognitive reappraisal usually works to make bad feelings less strong, recent studies show that the people around you (the social context) change how well it works. This means the main idea is about how social context affects cognitive reappraisal.

Choice (A) is wrong because the passage says the effectiveness is not consistent and is changed by social context.

Choice (C) is wrong because the passage only mentions social rejection as a context where it might be less effective, not all social situations, and it doesn't say it's always ineffective for this group.

Choice (D) is wrong because the passage states that social support influences both the use and the effectiveness of cognitive reappraisal.

Question 10

Correct Answer: A

The passage talks about how giant kelp, *Macrocystis pyrifera*, grows well because it can use different types of nitrogen, like urea and nitrate. This helps it grow even when there isn't much nitrate. The passage also mentions that how the water moves affects how the kelp takes in nutrients.

(A) says that giant kelp grows well because it uses different nitrogen sources, like urea, which helps when there is not a lot of nitrate. This matches what the passage says.

(B) is wrong because the passage says kelp uses more than just nitrate and that water movement affects nutrient uptake.

(C) is wrong because the passage focuses on nitrogen and nutrient uptake, not just water temperature.

(D) is wrong because the passage states that urea also plays a role in the kelp's growth, not just nitrate.

Question 11

Correct Answer: D

The passage describes the naked mole-rat as a mammal with eusociality, explaining its social structure with a queen, breeding males, and non-reproductive workers who have specific roles. This matches the description in (D).

(A) is incorrect because the passage states that workers perform essential tasks like foraging and burrow maintenance, indicating their contribution is not negligible. (B) is too extreme by claiming the social system is unlike *other* mammals when the passage only focuses on the naked mole-rat and mentions eusociality is rare, not unique among all other mammals. (C) is too narrow; while the challenging environment is mentioned, the passage focuses more on describing the social structure itself rather than arguing that the environment was the *primary* cause of its evolution.

Question 12

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 13

Correct Answer: D

The passage discusses how looking at things found in ancient burial sites, like beads and colors, helps us understand what people in the past believed about death and symbols. The passage uses the Sunghir site as an example to show this.

(A) is incorrect because the passage uses the Sunghir site as an example, not stating it is the most important discovery.

(B) is incorrect because while interpreting ancient items can be hard, the passage focuses on what we can learn, not the challenges of interpretation.

(C) is incorrect because the passage highlights symbolic beliefs about death and the afterlife, not primarily the social status shown by the items.

(D) is correct because it accurately reflects that the passage's main point is about how objects from ancient burials help us understand past beliefs about death and symbolism.

Question 14

Correct Answer: C

The passage is about how readers in the Renaissance understood Homer's poems, the *Iliad* and the *Odyssey*. The passage says that Jessica Wolfe's book talks about this. It states that people in the Renaissance used the idea of *eris*, which means conflict, to think about the problems in their own time, like fights about religion and in the government. The passage says that Homer's poems were often used to talk about these problems.

Choice (A) is wrong because the passage says other old writings were also read, just that Homer's were read more for thinking about conflict.

Choice (B) is wrong because the passage talks about understanding big conflicts in society, not just personal spiritual journeys.

Choice (D) is wrong because the passage says Homer's poems were read widely and were very important for understanding the problems of the time.

Question 15

Correct Answer: B

The passage talks about the fungus *Archaeorhizomyces maximus*, where it is found (in soil and plant roots), and what scientists think it does (helps move nutrients like phosphorus and might work with bacteria). It also mentions that this fungus is found in many places. The main idea is what the passage is mostly about.

(A) is wrong because the passage says the roles are still being studied, not proven.

(B) is correct because it covers that the fungus is common and likely important for nutrients and soil health, even though we don't know everything yet.

(C) is wrong because the passage only suggests a possible interaction with bacteria and doesn't say this is the main reason for its distribution or that other fungi don't do this.

(D) is wrong because the passage states that the exact roles are still under investigation, meaning they are not fully mapped or understood.

Question 16

Correct Answer: B

The passage talks about Minoan *Marine Style* pottery and how it shows their artistic skills. It also mentions that this pottery was found in many places, which means the Minoans traded a lot and shared their art with others. So the main idea is about the pottery showing their art and how they spread their culture through trade.

(A) is only about the artistic skills and connection to the sea, which is only part of the passage.

(C) talks about the Mycenaeans copying the style, which is a detail, not the main point.

(D) says the discovery of pottery is the *primary* evidence for trade, but the passage doesn't say it's the *only* or *primary* evidence, just that it *indicates* trade networks.

(B) covers both the artistic part ("artistic sophistication") and the trade part ("significant cultural impact through extensive trade networks"), which is the main idea of the passage.

Question 17

Correct Answer: B

The passage is about the *Bicyclus anynana* butterfly and how it has different looks depending on the season. It explains that temperature changes cause these differences by affecting things like coloring and hormones.

Choice (B) says the butterfly is a good example of how temperature changes the way it looks, including colors and spots, by changing how its body works inside. This matches what the passage says.

Choice (A) is wrong because the passage says hormone levels are just one part of why the butterfly changes, not the only reason.

Choice (C) is wrong because while eyespots help with defense, the passage's main point is not just about defense but how the butterfly changes its look with the seasons.

Choice (D) is wrong because it focuses only on the dry-season look and how it helps hide, instead of the overall idea of the butterfly changing with the seasons due to temperature.

Question 18

Correct Answer: C

The passage discusses the *Epic of Gilgamesh*, stating it is one of the earliest important works of literature. It highlights that the epic explores universal human themes like mortality and friendship and has influenced later literature and thought. The passage also mentions the ongoing study and translation of the work, showing its continued importance. Therefore, the main idea is about the epic's significance due to its early exploration of human themes and its influence.

Choice (A) is too narrow; while mortality is a theme, it's not the only focus of the passage or the epic. Choice (B) is a detail about the compilation of the epic, not the main idea of its significance. Choice (D) is incorrect because while the epic provides insights into ancient Mesopotamia, the passage emphasizes its literary and philosophical significance, not just its historical value as a depiction of ancient life.

Question 19

Correct Answer: A

The passage discusses a study that found negative effects of too much online information on young adults. The study showed that these young adults had worse executive functions, felt more stressed, and had trouble making decisions.

Option (A) states that research shows young adults with a lot of online information have worse executive functions, more stress, and difficulty deciding. This matches what the passage says.

Option (B) focuses on the study's methods (neuroimaging) and a specific part of the brain, which is a detail, not the main idea.

Option (C) says information overload is a *recently identified* phenomenon and *disproportionately* affects young adults, neither of which is stated in the passage.

Option (D) claims the study *definitively proves* a causal link, but the passage only states the findings *contribute* to the literature and mentions *correlations*, not definitive proof of causation.

Question 20

Correct Answer: C

The passage discusses how texts were copied in the Middle Ages by people called scribes. It explains that when scribes copied texts, they sometimes made mistakes or changed the text on purpose. These changes made the copies different from the original texts and also different from each other. This makes it hard for people today who study these old texts. So, the main idea is about how the scribes changed the texts and how this affects studying them today.

Choice (A) is incorrect because while the passage mentions scribes and implies they worked with important texts, it doesn't focus on their education level or where they worked.

Choice (B) is incorrect because the passage explicitly states that the process was prone to alteration and error, not that it ensured accuracy.

Choice (D) is incorrect because the passage focuses on textual changes and variations, not on the artistic aspects of manuscripts like illumination.