

Read the articles below then answer the questions that follow.

Revolutionising Sitting Habits

The concept of ergonomics has been around for centuries, with evidence of its practice dating back to ancient civilizations such as Greece and Rome. However, it wasn't until the Industrial Revolution that ergonomics truly came into its own, as the demands of modern manufacturing created a need for more efficient and comfortable workspaces. One of the most important inventions to emerge from this era was the ergonomic chair.

Ergonomic chairs are designed to provide maximum comfort and support for the human body, particularly during long periods of sitting. They are typically adjustable in multiple ways, including height, seat angle, backrest angle, and armrest height, to accommodate the unique needs of each individual user. In addition, they are often constructed from high-quality materials such as mesh, leather, or memory foam, which help to reduce pressure points and promote healthy circulation.

The history of ergonomic chairs can be traced back to the work of pioneering designers such as Niels Diffrient, who created the groundbreaking Freedom chair in 1999. This chair was notable for its innovative "dynamic mechanism," which allowed the seat and backrest to move in concert with the user's body, promoting healthy movement and reducing the risk of injury. Other important designers in the field of ergonomic chairs include Don Chadwick and Bill Stumpf, who created the now-iconic Aeron chair in 1994.

Today, ergonomic chairs are an essential tool for anyone who spends long hours at a desk, whether in an office, a home workspace, or a classroom. They have been shown to reduce the risk of back pain, neck pain, and other musculoskeletal disorders that can result from prolonged sitting. In addition, they can improve productivity and concentration by allowing users to focus more fully on their work, without the distraction of discomfort or pain.

There are several key features that distinguish ergonomic chairs from traditional office chairs. First and foremost, ergonomic chairs are designed to be adjustable in multiple ways, including seat height, seat angle, backrest angle, and armrest height. This adjustability allows users to customise the chair to their unique body shape and size, reducing pressure points and promoting healthy circulation.

Another important feature of ergonomic chairs is their use of high-quality materials that provide maximum comfort and support. For example, many ergonomic chairs use mesh or other breathable materials to prevent heat buildup and reduce sweating, while others use memory foam or other cushioning materials to provide targeted support where it is needed most.

One of the most important advances in ergonomic chair design in recent years has been the integration of advanced sensors and other technologies. These sensors can monitor users' movements and adjust the chair's settings automatically, ensuring that users always have the optimal level of support and comfort. Other technologies, such as built-in lumbar support or adjustable headrests, can further enhance the chair's comfort and health benefits.

Despite the many benefits of ergonomic chairs, there are still some challenges to widespread adoption in the workplace. One of the biggest obstacles is the cost, as ergonomic chairs are often more expensive than traditional office chairs. However, many experts argue that the long-term health benefits of ergonomic chairs justify the higher upfront cost.

Another challenge is the need for education and training on proper use of ergonomic chairs. Many workers may not be aware of the importance of good posture and movement, or may not know how to adjust their chair properly to fit their body. Employers can help address this issue by providing training and resources on ergonomic best practices, as well as investing in high-quality ergonomic chairs for their employees.

Looking to the future, it is clear that ergonomic chairs will continue to play a critical role in the workplace, as more and more people rely on computers and other technology for their jobs. As technology and design continue to advance, it is likely that ergonomic chairs will become even more sophisticated and effective in promoting healthy posture, movement, and well-being for workers. Whether in an office, home workspace, or classroom, ergonomic chairs are a key tool for anyone seeking to optimise their health and productivity while sitting for extended periods of time.

Answer the following questions by choosing the letter of the best answer.

1 All of the characteristics listed below are important aspects of ergonomic chairs, with the exception of

- A. Incorporation of state-of-the-art sensors.
- ☒ B. Compatibility with virtual reality technology.
- C. Usage of superior-grade materials.
- D. Versatility in multiple ways.

2 In what ways do ergonomic chairs contribute to enhancing one's ability to focus?

- A. By excessively providing comfort to the user, causing them to become overly relaxed and drowsy, their ability to concentrate is enhanced.
- B. By facilitating the user's capability to concentrate for brief periods, but inducing fatigue and reduced focus upon prolonged usage.
- ☒ C. By enabling users to concentrate on their tasks with greater intensity, unencumbered by the discomfort of bodily pains and discomforts.
- D. By diverting users' attention through their intricate design, resulting in undue expenditure of time in making adjustments, thereby detracting from their ability to concentrate on their primary task.

3 What is the significance of the Freedom chair?

- A. It was a prominent piece of furniture used by Don Chadwick during the American Revolution.
- B. It accounted for the utilisation by the Founding Fathers to draft the United States Constitution.
- C. It was an ergonomic chair brand that gained widespread popularity due to its portrayal as a representation of self-determination and autonomy.

- D.** It constituted a noteworthy advancement in the domain of ergonomic chair design, and its impact extended to inspiring the creation of numerous other chairs in the same field.

4 What was the role of the Industrial Revolution in the development of ergonomic chairs?

- A. Ergonomic chairs were created to be uncomfortable during the Industrial Revolution as a way to dissuade workers from taking breaks and losing focus on their tasks.
- B. The advent of the Industrial Revolution resulted in a shift towards uncomfortable seating arrangements that enabled individuals to remain attentive during extended working hours.
- C. The Industrial Revolution did not exert any influence on the evolution of ergonomic chairs as these were invented long before the Industrial Revolution and had no connection to it.
- D.** The needs of contemporary manufacturing during the Industrial Revolution formed a demand for more effective and pleasant workspaces, resulting in the creation of ergonomic chairs.

5 Which individuals can gain advantages from utilising an ergonomic chair?

- A. Individuals who work in offices with extravagant furnishings since it is a means of conveying social status, as these chairs are regarded as symbols of prestige.
- B. Only individuals who are overly short or tall, as these chairs are designed specifically for them.
- C.** Individuals who spend prolonged periods of time sitting or working at a desk or work surface.
- D. Individuals who are left-handed, as ergonomic chairs are made to accommodate their unique needs.

6 Which are health benefits that ergonomic chairs do NOT provide?

- I. Increases productivity through discomfort and distraction.
- II. Facilitates productiveness.
- III. Encourages inadequate body stance.
- IV. Improves concentration.
- V. Encourages proper body posture.
- VI. Heightening existing musculoskeletal ailments.
- VII. Diminishes the possibility of developing neck pain.
- VIII. Increases the likelihood of experiencing back discomfort.

- A. I, V, III and VI
- B. II, IV, V and VII
- C.** VI, III, I and VIII
- D. VII, V, IV, III and I

7 What are the challenges that prevented ergonomic chairs from being widely adopted in work environments?

- A. Paramount comfortability that caused workers to become unproductive.
- B.** Increased costs and the need for instruction on appropriate utilisation.
- C. Insufficient enthusiasm and demand from workers and employers as they deem it unnecessary.

- D. The chairs were too heavy and difficult to move around and were found to be a fire hazard in some work environments.

8 How can employers help address the issue of proper use of ergonomic chairs?

- A. By promoting the notion of increasing tolerance through extended periods of sitting, employees are encouraged to work longer hours in their chairs.
- B. By offering employees the option to use standing desks, which allow them to avoid prolonged sitting in chairs and engage their back muscles.
- C. By providing employees with a one-size-fits-all manual and giving them regular massages to prevent back pain.
- D. By offering employees guidance, mentorship, and materials regarding the best practices in ensuring ergonomic safety and efficiency.**

Lasagna: A Rich History of Culinary Delight

Lasagna, a dish that consists of layers of pasta, meat, cheese, and tomato sauce, has captured the hearts and palates of people all over the world. This classic Italian dish is a beloved comfort food for many, and its history and evolution reflect the cultural diversity and creativity of people around the world.

The origins of lasagna can be traced back to ancient Greece and Rome, where layered dishes of pasta, cheese, and meat were common. However, the modern-day version of lasagna is believed to have originated in the Italian city of Naples during the Middle Ages. At the time, lasagna was a simple dish made with layers of pasta, cheese, and tomato sauce.

As lasagna gained popularity in Italy, it began to evolve and take on new variations. For example, in northern Italy, lasagna is typically made with a creamy béchamel sauce and sometimes includes spinach. In southern Italy, where lasagna is believed to have originated, the dish is typically made with a tomato-based sauce and layers of ricotta cheese.

In the late 19th century, lasagna underwent a significant transformation thanks to the influence of the Italian diaspora. As Italians began to migrate to other parts of the world, they brought their traditional recipes with them, including lasagna. However, as they adapted to new environments, they also began to incorporate new ingredients and flavours into their dishes. This led to the creation of different types of lasagna, such as lasagna with seafood or vegetarian lasagna with zucchini and eggplant.

Interestingly, the way that lasagna is prepared can vary greatly depending on the region of Italy it comes from. For instance, in Emilia-Romagna, a region known for its rich culinary traditions, lasagna is often made with a meat sauce that includes beef, pork, and sausage. In other regions, such as Liguria, lasagna is made with pesto sauce instead of tomato sauce, giving it a unique flavour and texture.

Another interesting aspect of lasagna is the way it is served and enjoyed. In some parts of Italy, lasagna is considered a festive dish that is reserved for special occasions, such as weddings or holidays. However, in other regions, lasagna is a staple of everyday cooking and is enjoyed on a regular basis.

Beyond Italy, lasagna has become a popular dish in many countries around the world. In Mexico, lasagna is sometimes made with spicy chorizo sausage and topped with avocado or salsa. In Japan, lasagna is sometimes made with noodles that are made from soybeans instead of wheat, making it a great option for those who are gluten-free.

In recent years, there has been a trend towards healthier versions of lasagna. With an increased focus on health and wellness, many people are looking for ways to make their favourite dishes more nutritious. As a result, there are now many recipes for lasagna that use alternative ingredients, such as whole-grain pasta, lean ground turkey, and low-fat cheese.

Finally, one of the reasons why lasagna has become so popular is its versatility. The ingredients can be easily adapted to fit different dietary preferences, making it a great option for vegetarians and meat lovers alike. Moreover, the dish can be customised with different types of cheeses and sauces, allowing for endless flavour combinations. Furthermore, lasagna can be made in advance and then reheated, making it a convenient option for busy weeknights or when entertaining guests.

Answer the following questions by choosing the letter of the best answer.

9 How did the Italian diaspora influence the evolution of lasagna?

- A. It actually led to the disappearance of lasagna from Italian cuisine, as many Italians who migrated abroad did not appreciate the dish anymore.
- B. It directed to the standardisation of lasagna, with only one version of the dish being recognized as authentic and traditional.
- ☒ C. It gave rise to the emergence of novel varieties of the dish, featuring unique components and tastes that were tailored to different environments.
- D. It had remained stagnant throughout history, as there was no discernible impact on its culinary development.

10 What are some regional differences in lasagna preparation in Italy?

- A. The temperature at which the lasagna is heated and cooked.
- ☒ B. The variations in the type of cheese, sauce, and meat utilised.
- C. The quantification and mass of preferred toppings employed in the preparation of lasagna.
- D. The use of fish as the main ingredient in coastal areas and strawberries in suburban areas.

11 How is lasagna served and enjoyed in different regions of Italy?

- A. In certain parts of Italy, lasagna is enjoyed as a soup, whereas in other regions, it is enjoyed as a layered pasta dish.
- B. In certain parts of Italy, it is eaten with a side of French fries during celebrations, whereas in other regions, it is served cold with a side of pickled vegetables on a normal basis.
- C. In certain parts of Italy, lasagna is typically eaten as a festive dish, whereas in other regions, it is a celebratory dessert.
- ☒ D. In certain parts of Italy, lasagna is regarded as a celebratory dish, whereas in other regions, it is a routine culinary item.

12 How has lasagna become a popular dish in countries outside of Italy?

- A. Through its initial introduction to other countries via an international conspiracy by the Italian government to promote their cuisine and culture.
- ☒ B. Through its adaptability to other countries' diverse local ingredients and preferences, as well as the influence of the Italian diaspora.
- C. Through the culinary expertise of Chef Gordon Ramsay, through his prominent feature in his TV show and acclaimed restaurants.
- D. Upon being found to possess extraordinary healing abilities that effectively cured numerous ailments encountered during the Marco Polo expedition.

13 According to the article, which of the following are some international variations of lasagna?

- I. Creamy béchamel sauce in America.
- II. Soybean noodles in Japan.
- III. Vegetarian lasagna with zucchini and eggplant in Korea.
- IV. Spicy chorizo sausage in Mexico.

- A. III and I
- B. I, III and IV
- ☒ C. II, I and III
- D. IV and II

14 How has the trend towards healthier eating impacted lasagna?

- A. There are now numerous lasagna recipes that are fit for those who want a decrease in nutritional value by using alternative ingredients like zucchini noodles instead of pasta.
- B. There are now numerous lasagna recipes that replace traditional ingredients with processed and pre-packaged versions that are high in sodium and preservatives.
- ☒ C. There are now numerous lasagna recipes that incorporate alternative components, such as vegetarian sauces and cheese and gluten-free pasta substitutes.
- D. There are now numerous lasagna recipes that integrate alternative ingredients that are highly processed ingredients that are full of chemicals and additives.

15 How is lasagna a convenient dish for busy weeknights or entertaining guests?

- A. It can be prepared in advance and is conveniently easy to re-fry.
- ☒ B. It could be put together ahead of time and then reheated with ease.
- C. It can be taken straight out of the freezer without thawing and can be served without cooking.
- D. It can be cooked while one is sleeping and can be easy to transport to gatherings without causing any spills or messes.

16 How has lasagna reflected cultural diversity and creativity?

- A. Lasagna has reflected cultural diversity and creativity by maintaining the same recipe for centuries without any innovation or changes.
- B. Lasagna has reflected cultural diversity and creativity by being completely removed from cultural traditions and ingredients, making it a completely new and unique dish.
- C. Lasagna has exemplified the diversity of cultures and ingenuity by assimilating novel elements and tastes across various regions and nations globally.
- D. Lasagna has never reflected cultural diversity and creativity because it is just a dish made of pasta, meat, and cheese.

The "Super" Ghost Orchid is Blooming!

Now blossoming in Audubon's Corkscrew Swamp Sanctuary is the "Super" ghost orchid. Ghost orchids are exceedingly rare, wetland-dependent flowering plants that are only known to exist in South Florida and Cuba. According to the International Union for Conservation of Nature (IUCN) Red List, the Ghost Orchid is currently listed as critically endangered, with a decreasing population trend.

"I love seeing the first ghost orchid blossom of summer for its beauty and hope," says Sanctuary Director Lisa Korte, PhD. "This delicate, white, dancing flower demonstrates that we are safeguarding Corkscrew Swamp in a way that enables nature to flourish," she added. "We are fortunate to have one of these incredible orchids visible from our boardwalk."

In July of 2007, the "Super" phantom orchid, one of several documented at the Sanctuary, was discovered. Although it has bloomed at other times of the year, it typically returns to the limelight every summer. As the largest phantom orchid ever discovered, its blossoms attract worldwide attention.

Ghost orchids are epiphytes or plants that adhere to the bark and branches of certain tree species. They obtain all of their food and water from the atmosphere or the bark of their host tree, but cause no damage to it. Ghost orchids lack true foliage and are nearly invisible for the majority of the year. After the flowers have fallen, only the plant's roots remain. As soon as the summer rains and humidity return to the forest, phantom orchids produce numerous spikes, buds, and flowers. The majority of flowering occurs between June and October.

One of its most striking adaptations is its ability to produce long, thin roots that can stretch up to several metres in length, allowing it to access moisture and nutrients from the humid air. It also has a complex and specialised relationship with a specific species of moth, the Giant Sphinx Moth. The moth is the only known pollinator of the Ghost Orchid, and it is attracted to the flower's strong scent and nectar.

Despite its unique adaptations and specialised pollination system, the Ghost Orchid is now considered to be one of the most endangered plant species in the world. The main threat to the Ghost Orchid is habitat loss, as its wetland and swamp habitats are being destroyed by development and land-use changes. In addition, the Ghost Orchid is also vulnerable to poaching, as it is highly prized by collectors and can fetch very high prices on the black market.

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The "Super" ghost orchid at Corkscrew Swamp Sanctuary is situated approximately 70 feet above the earth on a bald cypress tree about 100 feet away from the boardwalk. Enthusiasts of orchids are encouraged to bring a spotting scope or binoculars to view the flowers, and a 600 mm lens length is recommended for capturing a decent photograph.

This rare orchid can thrive in Corkscrew Swamp Sanctuary because of its climate and ecosystem. Ghost orchids are exclusive to subtropical wetland habitats and are most prevalent in remote swamps, where they are only visible when in blossom. The orchids are threatened by exploitation, habitat loss and/or degradation, and climate change. The quantity and character of wetland habitats in Florida have been drastically diminished by human activities over the past several decades. The future of phantom orchids depends on vigilant habitat protection and respect and admiration from a distance for this captivating species.

Answer the following questions by choosing the letter of the best answer.

17 How does the ghost orchid exhibit adaptability to its surroundings?

- A. It is able to modify the texture of its bark enabling it to seamlessly assimilate into its environment, effectively evading detection by potential predators.
- B. It releases a chemical substance that serves as a deterrent to other nearby plants, thereby safeguarding its exclusive access to essential nutrients for its own sustenance.
- ☒ C. It produces lengthy and slender roots that are capable of extending to multiple metres in size, enabling it to obtain moisture and nutrients from the humid air.
- D. It possesses the ability to enter a state of prolonged hibernation, enabling it to conserve energy and endure challenging environmental conditions.

18 How does the ghost orchid propagate?

- A. By means of spore dissemination in the atmosphere.
- ☒ B. Through a particular kind of moth-mediated pollination.
- C. Via underground roots that extend like tendrils and attach to neighbouring plants.
- D. They undergo asexual reproduction, devoid of the requirement for pollination or seed generation.

19 How does the ghost orchid attract global regard?

- A. Due to its emission of a high-pitched sound that can only be audible solely to individuals with exceptional auditory acuity.
- B. Due to its distinctive aroma, which is perceptible only to rare species of moths, and the unparalleled fragrance that sets it apart from all other discovered flowers.
- C. Due to its considerable dimensions and mass, as well as its ability to undergo chromatic variations, making it favoured in scientific investigations.
- ☒ D. Due to its exquisite blossoms and the distinction of being the largest phantom orchid ever documented.

20 Based on the article, which of the following is NOT one of the main threats to the Ghost Orchid's survival?

- ☒ A. Wildfire
- B. Poaching
- C. Habitat loss
- D. Climate change

21 What is the role of Corkscrew Swamp Sanctuary in protecting the Ghost Orchid?

- A. They are using pesticides to control the Ghost Orchid population, which is causing a tremendous amount of benefit for the orchid in terms of growth and evolution.
- B. They are allowing invasive species to thrive and compete with the orchid for resources, leading to its development of resilience in coexisting with other species.
- C. They are gathering the orchid for commercial purposes, resulting in over-harvesting and endangering the species' survival in the wild.
- ☒ D. They are ensuring the preservation of the orchid by creating a carefully curated environment that caters to its specific climatic and ecological requirements, thus safeguarding its survival.

22 How do collectors value the ghost orchid?

- A. It is a work of art, cherished by collectors for its meticulous craftsmanship.
- ☒ B. It holds immense significance among collectors, commanding exorbitant prices in illicit markets.
- C. It carries high value among collectors, who have invested a significant amount of time and effort into uncovering its healing capabilities.
- D. Collectors highly value its creativity and profound historical relevance, regarding it with great admiration.

23 After reading the article, which of the following is required to ensure the Ghost Orchid's survival and future?

- A. Meticulous transplanting of the orchids to other regions to increase their population and guarded harvesting for their medicinal properties.
- ☒ B. Cautious preservation of the orchid's native environment and reverential appreciation from a respectful distance.
- C. Careful introduction of non-native species to the orchid's habitat for biodiversity and inattentive encouragement of human interaction and physical handling to promote awareness.
- D. Regularly picking the orchid's flowers to encourage faster growth and reproduction, and carefully using pesticides to eliminate all competing plant species in its habitat.

24 How does the blooming of the Ghost Orchid demonstrate the effect of the conservation efforts at Corkscrew Swamp Sanctuary?

- A. It could potentially be linked to genetic modifications conducted by conservationists, which may have altered the orchid's natural characteristics.
- B. It could suggest that despite conservation efforts, invasive species have inadvertently thrived, posing a threat to the orchid's resources and resulting in a decline in its population.
- C. It could have been disrupted by artificial lighting installed by conservationists, potentially impacting the orchid's natural reproductive cycle and resulting in irregular blooming patterns.
- D. It could be interpreted as an indication of the positive impact of conservation initiatives at the sanctuary in safeguarding and maintaining the natural environment of the orchid.

Energising the Future: The Rise of Electric Bikes

Electric bikes, also known as e-bikes, are a form of bicycle that is powered by an electric motor. The electric motor assists the rider, allowing them to travel further and faster with less effort than a traditional bike. In recent years, e-bikes have become increasingly popular as a mode of transportation, and are now seen as a viable alternative to cars and public transportation in many urban areas.

The history of e-bikes can be traced back to the late 19th century, when electric motors were first being developed. In 1895, Ogden Bolton Jr. patented an electric bicycle design, which used a small motor to assist the rider. However, the technology was still in its infancy, and it wasn't until the 1990s that e-bikes began to gain popularity. Since then, advances in battery technology and motor efficiency have made e-bikes a practical and efficient form of transportation.

The technology behind e-bikes is relatively simple. The bike is equipped with an electric motor and a battery, which powers the motor. The motor provides assistance to the rider, allowing them to pedal with less effort and travel further and faster than on a traditional bike. The amount of assistance provided by the motor can be adjusted by the rider, allowing them to tailor the level of assistance to their needs.

One of the main benefits of e-bikes is their efficiency. E-bikes are much more energy-efficient than cars or public transportation, and can be a cost-effective and environmentally-friendly form of transportation. In addition, e-bikes can be a great way to get exercise, as they allow riders to travel further and tackle steeper hills than they would be able to on a traditional bike. E-bikes can also be a great option for commuters, as they can help reduce traffic congestion and shorten commute times.

Another benefit of e-bikes is their accessibility. E-bikes can be a great option for people who are unable to ride traditional bikes due to physical limitations or health issues. For example, e-bikes can be a great option for people with joint pain or mobility issues, as the electric motor can help take the strain off of their joints. E-bikes can also be a great option for people who live in hilly areas, as the motor can help make steep inclines more manageable.

Despite their many benefits, e-bikes are not without their challenges. One of the main challenges facing e-bikes is safety. E-bikes can be faster and heavier than traditional bikes, and riders may not be accustomed to the added speed and weight. In addition, e-bikes are still relatively new, and many

drivers may not be aware of their presence on the road. As such, it is important for e-bike riders to take extra precautions to ensure their safety.

Overall, e-bikes are a revolutionary form of transportation that offer many benefits over traditional bikes, cars, and public transportation. With advances in technology and growing awareness of their benefits, e-bikes are poised to become an increasingly popular form of transportation in the coming years. While there are still challenges to overcome, the potential benefits of e-bikes are too great to ignore.

Answer the following questions by choosing the letter of the best answer.

25 What benefit do riders gain from the motorised assistance provided by e-bikes?

- A. It generates a magnetic force that draws the bike towards the rider's body, thereby ensuring stability and preventing accidents even when navigating steep slopes.
- B. It makes it possible for riders to traverse through snowy terrain and steep slopes with greater ease compared to conventional bicycles.
- ☒ C. It enables riders to cover greater distances and conquer more challenging slopes compared to a conventional bicycle with reduced exertion.
- D. It offers riders the ability to drive through more difficult terrain with less effort than a standard bike.

26 Based on the article, which of the following are some of the benefits of using e-bikes as a form of transportation?

- I. Budget-friendly.
- II. Physically demanding.
- III. Energy-conserving.
- IV. Suitability for long distances.
- V. Environmentally conscious.
- VI. Requires constant fueling and maintenance.

- ☒ A. III, I and V
- B. II, VI and IV
- C. VI, I, III and II
- D. V, III, VI and IV

27 How can e-bikes provide assistance to individuals facing physical limitations or health challenges?

- A. Its steering wheel can provide support and stability for riders' who have trouble driving, reducing the effort required to move and reducing the risk of falls.
- B. Its wheels can help reduce strain on the riders' back and neck, making it easier for them to ride for longer periods of time without discomfort.
- C. Its electric motor provides relief to riders' joints or muscles, alleviating the effort required to pedal and ride.
- D. Its seating position can improve blood flow and reduce swelling in the riders' legs, providing relief to people who are on their feet for extended periods of time.

28 How can e-bikes help reduce traffic congestion?

- A. By imposing specific licences and permits to use an e-bike can potentially result in a reduction in the efficiency of traffic flow.
- B. By offering an alternative means of mobility that does not hinge on personal vehicles or traditional public transit.
- C. By emitting more greenhouse gases than traditional bicycles, contributing to air pollution and traffic.
- D. By establishing additional bike lanes occupying limited road space and potentially contributing to increased traffic congestion.

29 How can e-bikes help influence environmental impact?

- A. They have no positive impact on the environment since they use batteries that are not environmentally friendly.
- B. They have no effect on reducing environmental impact since they require the production of new materials and contribute to the depletion of natural resources.
- C. They lead to more traffic congestion and increased emissions, making them worse for the environment than cars or public transit.
- D. They release reduced amounts of pollutants and greenhouse gases in comparison to automobiles or public transit.

30 How can e-bikes pose safety concerns?

- A. They may spontaneously combust due to their high-tech batteries, which are made from cheap and volatile materials that are prone to exploding.
- B. They are made of inferior materials that are prone to shattering on impact, such as thin plastic and brittle metal that can easily break apart during a collision.
- C. They may cause severe allergic reactions in some people, especially those who are sensitive to the toxic chemicals used in their manufacturing process.
- D. They may possess higher speed and weight compared to traditional bicycles, potentially causing riders to feel less accustomed to the increased velocity and load.

31 According to the sixth paragraph, e-bikes are still relatively new, and many drivers may not be aware of their presence on the road. What does this mean?

- A. This means that e-bikes are extremely old and outdated, and most drivers have already forgotten about them.
- B. This implies that e-bikes are only meant for off-road use, and drivers should avoid encountering them on the streets.
- ☒ C. This implies that certain drivers have yet to fully comprehend the presence and proper utilisation of e-bikes.
- D. This means that e-bikes are not allowed on the road, and any driver who sees one should report it to the authorities immediately.

32 What role do advances in technology play in the rise of e-bikes?

- A. Recent advancements in ocean-based fuels have made e-bikes a popular and practical transportation option due to their convenience and effectiveness.
- ☒ B. Recent improvements in battery technology and motor efficiency have rendered e-bikes a convenient and effective mode of transportation, thus driving their growing adoption.
- C. Recent improvements in renewable energy sources, such as wind and solar power, have greatly reduced our reliance on e-bikes.
- D. Recent advancements in contactless transportation have transformed the way we travel, providing a safer and more convenient mode of transportation compared to e-bikes.

The Arctic Sentinel: A Look into the World of Polar Bears

Polar bears are among the most iconic and recognizable animals of the Arctic region. These magnificent creatures have captured the imagination of people for centuries, and are often portrayed in literature, film, and art as symbols of strength, endurance, and adaptability.

The history of polar bears can be traced back to the Pleistocene epoch, around 100,000 years ago, when the Arctic climate began to take shape. Polar bears are believed to have evolved from a common ancestor with brown bears, adapting to the harsh Arctic climate and developing unique features such as their white fur and large, padded paws for traversing snow and ice. Today, polar bears are found throughout the Arctic region, with the majority living in Canada, Alaska, and Greenland.

The biology of polar bears is fascinating and complex. These bears are one of the largest carnivores in the world, with males weighing up to 1500 pounds and standing up to 10 feet tall when on their hind legs. Polar bears have a thick layer of insulating fur and a thick layer of blubber that helps them stay warm in the frigid Arctic temperatures. They also have a keen sense of smell, which they use to hunt for seals, their primary food source. Polar bears are known for their powerful swimming abilities and can swim for long distances to reach hunting grounds or to find new areas of ice to live on.

Despite their impressive adaptations, polar bears face a number of challenges in the rapidly changing Arctic ecosystem. Climate change is having a significant impact on the Arctic, causing the ice to melt and the sea levels to rise. This is having a profound effect on the polar bear population, as they rely on the sea ice to hunt for seals and to travel between hunting grounds. As the ice melts, polar bears are

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finding it increasingly difficult to find food, and are forced to swim longer distances in search of prey. This can be dangerous, as they may become exhausted or be preyed upon by other animals.

Another challenge facing polar bears is human activity. The Arctic region is becoming increasingly accessible due to advances in technology and transportation, which is leading to increased industrial activity such as oil drilling and shipping. This can lead to habitat destruction and disturbance, which can disrupt the delicate balance of the Arctic ecosystem and make it harder for polar bears to survive.

Despite these challenges, there is hope for the polar bear population. Efforts are being made to protect and conserve the Arctic ecosystem, such as establishing protected areas and reducing carbon emissions to slow down the effects of climate change. These efforts are crucial in ensuring that polar bears, and the entire Arctic ecosystem, continue to thrive for generations to come.

In conclusion, polar bears are fascinating creatures that have captivated people for centuries. Their adaptations to the harsh Arctic environment are nothing short of remarkable, and their presence in the Arctic ecosystem is vital to maintaining the delicate balance of this unique and fragile region. While they face significant challenges, efforts are being made to protect and conserve their habitat, and there is hope that these efforts will ensure the survival of these magnificent creatures for generations to come.

Answer the following questions by choosing the letter of the best answer.

33 In the extremely cold conditions of the Arctic, what mechanisms do polar bears utilise to maintain their body temperature?

- A. Polar bears are capable of regulating their body temperature in the Arctic environment by entering into a state of hibernation during the winter season.
- B. The thermal protection of polar bears is attained by utilising their body heat to process substantial amounts of ice and snow, which they can metabolise for energy production.
- ☒ C. The insulation of polar bears consists of two substantial layers, namely a thick coat of fur and a thick layer of blubber.
- D. Polar bears possess the capability to generate warmth by friction when they rub their paws together, akin to the way in which humans can warm their hands through this action.

34 How might polar bears be affected by swimming longer distances in search of prey?

- A. Polar bears possess a remarkable immunity to the adverse effects of prolonged swimming over vast distances, enabling them to swim ceaselessly without any detrimental impacts.
- B. Extended swimming can have a positive impact on the physical well-being of polar bears, as it can lead to enhanced muscle development and improved overall fitness.
- C. Polar bears are adapted to hunting prey in the water, so swimming longer distances is not likely to have any significant impact on their health or behaviour.
- ☒ D. Extended swimming can pose a threat to polar bears as it can result in fatigue and make them vulnerable to predation by other creatures.

35 How do polar bears go about capturing their main source of sustenance?

- A. Using their remarkable dexterity and agility, polar bears run after their prey across the expansive Arctic terrain, capturing them with their razor-sharp fangs.
- B. They depend on their remarkable visual acuity, enabling them to detect their prey from significant distances, and then silently track them until a close proximity to execute their attack.
- ☒ C. They rely on their acute olfactory abilities to detect seals, patiently waiting for them to surface for air before swiftly seizing them with their powerful jaws.
- D. With their exceptional echolocation abilities, they adeptly traverse the obscure depths, honing in on their unwitting quarry.

36 How are human activities such as oil drilling and shipping affecting the Arctic ecosystem?

- A. It is significantly improving the Arctic ecosystem by introducing new species.
- ☒ B. It is resulting in the degradation and disruption of the natural environment.
- C. It is improving the Arctic ecosystem by providing additional resources for its inhabitants.
- D. It is not affecting the Arctic ecosystem at all, as it is too far away from human populations.

37 How does the melting of sea ice impact the ability of polar bears to survive?

- A. It considerably provides advantages to polar bears by augmenting their available living area.
- B. It facilitates the location of food sources, thus enhancing their probability of survival.
- C. The ability of polar bears to adapt to varying surroundings implies that the current circumstance is not a major concern for them.
- ☒ D. It presents a challenge for polar bears in their search for food, thereby increasing their risk of starvation and consequent decline in population.

38 How is climate change impacting polar bears?

- A. It is leading to a significant rise in the population of polar bears to increase rapidly, as their habitats are expanding and they have more access to food.
- ☒ B. It is resulting in an elevation of sea levels, which is posing challenges for polar bears in terms of procuring sustenance and navigating through various hunting locations.
- C. Polar bears are exhibiting increased aggression, thereby posing a greater risk to human safety in the event of an encounter.
- D. Polar bears are unaffected by climate change, as they have adapted to live in colder climates and can survive even in the harshest conditions.

39 How can establishing protected areas help the Arctic ecosystem and polar bear population?

- A. It will have no impact on the Arctic ecosystem and polar bear population as they can adapt to any changes in their environment.
- B. It will encourage the breeding of polar bears, which will result in overpopulation and cause damage to the Arctic ecosystem.
- ☒ C. It can aid in safeguarding the natural habitats of polar bears and other Arctic creatures, promoting their continued prosperity.

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- D. It will harm the Arctic ecosystem and polar bear population by limiting their access to food and resources.

40 How important is the presence of polar bears in the Arctic ecosystem?

- A. The Arctic ecosystem would actually be better off without polar bears, as they are known to prey on other important species that are essential for the ecosystem's survival.
- B.** The presence of polar bears plays a crucial role in preserving the intricate equilibrium of this unique and vulnerable region.
- C. Polar bears are not native to the Arctic and were introduced by humans, so their presence is actually harmful to the ecosystem.
- D. Polar bears are only important in the Arctic ecosystem for tourism purposes, as they attract visitors to the region.

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