

1-6: For these questions, choose the best word or expression to fill the space.

1. In the time of the Ancient Greeks and Romans, secret societies practised ----, the knowledge of which has since been lost to time.
 - A) disorders
 - B) trials
 - C) deliveries
 - D) rituals
 - E) categories

2. Early evidence suggests that psilocybin may help treat anorexia nervosa, an eating disorder characterised by ---- body image and food restriction.
 - A) definitive
 - B) controversial
 - C) distorted
 - D) qualified
 - E) gorgeous

3. Basking sharks can ---- a body temperature that is higher than their environment, putting them among a small group of fish species that are warm-blooded.
 - A) magnify
 - B) attribute
 - C) curb
 - D) tackle
 - E) maintain

4. The current whirlwind of interest in AI is largely down to the sudden arrival of a new generation of AI-powered chatbots capable of ---- human-like text-based conversations.
 - A) startlingly
 - B) imprecisely
 - C) unwillingly
 - D) fashionably
 - E) effortlessly

5. New research suggests that pouring some seawater on green turtles' nests may be a simple way to reverse a severe ---- in male births that has been linked to global warming.
 - A) concentration
 - B) decline
 - C) clarification
 - D) deterrent
 - E) improvement

6. Knee dislocations and fractures inside the knee can ---- post-traumatic osteoarthritis, yet it is meniscus and cruciate ligament injuries which hold the highest risk of developing the disease.
 - A) lead to
 - B) deal with
 - C) go off
 - D) pull up
 - E) wear out

7-16: For these questions, choose the best word(s) or expression(s) to fill the space(s).

7. Once radium ---- in 1898, various uses for it were suggested including cosmetics, so the likes of perfumes, toothpaste, lipsticks and creams containing radium and thorium chloride ---- popular especially in France.
 - A) was being discovered/ were becoming
 - B) had been discovered/ would have become
 - C) was discovered / became
 - D) is discovered / are becoming
 - E) would be discovered/ will become

8. Theoretically, earthquakes ---- two hours before they occur, saving countless lives – but first we ---- GPS sensors that are 100 times more precise than those in use today.
 - A) must be predicted / need to develop
 - B) could be predicted/ must develop
 - C) are to be predicted / were to develop
 - D) had to be predicted/ are supposed to develop
 - E) should be predicted / had to develop

9. Deep-fried foods coated in crispy batter ---- all over the world, but perhaps nowhere are they more revered than in Japan, where chefs spend years and do their best---- their craft.
- A) are being enjoyed/ mastering
B) will be enjoyed / having mastered
C) enjoyed/ to have mastered
D) were enjoyed / master
E) are enjoyed/ to master
10. Jackal flies ---- the genus, or sub-family *Desmometopa* feed ---- the blood of insects, especially honeybees, that have been killed by spiders and praying mantises.
- A) of/ over B) at / by
C) in / into D) for / onto
E) from / on
11. A sediment core from under the Greenland ice sheet has provided the first direct evidence that much of the ice disappeared ---- an interglacial period 400,000 years ago, when global temperatures were similar ---- today's.
- A) to / from B) amid / in
C) with / on D) during / to
E) off / beyond
12. ---- Costa Rica covers just 0.03 per cent of Earth's land surface, it is one of the most species-dense countries in the world.
- A) Since B) When
C) As D) Though
E) If
13. Interest rate rises aim to diminish spending across the economy, helping to curb inflation,----the measures in question are also curtailing investment, with wind, solar and other green energy projects now struggling to get off the ground.
- A) until B) since
C) unless D) while
E) because
14. ---- fast fashion – cheap clothes bought and cast aside as trends change – has grown, the volume of clothing coming to the market has increased, which some sayat the expense of the quality.
- A) Even if B) As if
C) As D) While
E) Only if
15. Over the past few years, ---- complex mathematical models combining traditional statistical techniques ---- machine learning analysis have shown promise in the early detection of financial statement fraud.
- A) not / but B) as / as
C) both / and D) such / that
E) either / or
16. NASA's Viking 2 lander probably discovered quakes on Mars almost 50 years ago, but this has only just been confirmed ---- data from the InSight probe.
- A) thanks to B) in turn
C) as opposed to D) in spite of
E) on behalf of

17-21: For these questions, choose the best word or expression to fill the spaces in the passage.

Longhouses were the homes of the Iroquois– indigenous American tribes that included Mohawk, Oneida, Onondaga, Cayuga, and Seneca – and **(17)** ----a number of families given the extended family structure. Longhouses have been built in a variety of different cultures, with evidence of the earliest examples in Europe and originating from around 5000 BCE. **(18)** ----, the Vikings of Scandinavia are said to have lived in variations of the form. Other indigenous peoples of North America, including those living on the coast of the Pacific Northwest, lived in such structures, **(19)** ---- these varied in design and construction to those built by the Iroquois. The name is an obvious reference to the long shape of these homes, usually **(20)** ---- by the size and number of the families who were to live in them. A typical Iroquois village was comprised of a number of longhouses and was surrounded by a palisade, a protective wall constructed **(21)** ----materials such as wood and bark.

17.

- | | |
|-----------------------|----------------|
| A) will house | B) would house |
| C) had to house | D) must house |
| E) should have housed | |

18.

- | | |
|----------------|---------------|
| A) Otherwise | B) Therefore |
| C) In contrast | D) Eventually |
| E) For example | |

19.

- | | |
|---------------|----------------|
| A) though | B) unless |
| C) since | D) by the time |
| E) as soon as | |

20.

- | | |
|--------------|---------------|
| A) overgrown | B) undermined |
| C) dictated | D) protected |
| E) covered | |

21.

- | | |
|---------------|-----------|
| A) for | B) out of |
| C) away | D) below |
| E) throughout | |

22-26: For these questions, choose the best word or expression to fill the spaces in the passage.

One of the most exciting **(22)** ---- for Alzheimer's research is in finding new and easily accessible signatures of the disease carried in blood, mucus or saliva. That is important **(23)** ---- patients need to be diagnosed quickly and easily before they can be treated. Scientists and clinicians use imaging such as fMRI and PET as imaging biomarkers allow physicians to look at where and how much the brain has been affected. Additionally, examining cerebrospinal fluid via lumbar puncture **(24)** ---- how much amyloid and tau is being created, a useful marker of disease. But these are all somewhat invasive or disruptive procedures, and require significant resources **(25)** ---- staffing, equipment and cost. There is a shift now **(26)** ---- less invasive ways of finding markers. Blood biomarkers are probably the most advanced of the new technologies. They work in a research setting now, but are not quite ready for clinical practice.

22.

- | | |
|-----------------|--------------|
| A) drawbacks | B) estimates |
| C) protectors | D) prospects |
| E) coincidences | |

23.

- | | |
|--------------|--------------|
| A) because | B) although |
| C) as though | D) even when |
| E) just as | |

24.

- | | |
|--------------------------|------------------------|
| A) should reveal | B) must reveal |
| C) is supposed to reveal | D) might have revealed |
| E) can reveal | |

25.

- | | |
|-------------------|-------------------|
| A) in addition to | B) in contrast to |
| C) despite | D) in terms of |
| E) before | |

26.

- | | |
|---------|------------|
| A) onto | B) towards |
| C) over | D) for |
| E) by | |

27-36: For these questions, choose the best option to complete the given sentence.

27. ----, their misuse and overuse have contributed to the emergence of bacteria which harbour genes that enable them to withstand the killing power of antibiotics.

- A) As antibiotic resistance is a growing threat to global health, causing over 1.27 million deaths worldwide in 2019 only
- B) Whereas antibiotic resistance mainly spreads to humans through contaminated food or water
- C) Although antibiotics are used to treat bacterial infections such as urinary tract infections and pneumonia
- D) Since scientists are developing antibiotics that are used to eradicate infections that are much harder to treat
- E) Because the unscientific way antibiotics are used throughout the world has been discussed in scientific circles

28. ---- while in ancient Rome, love had very little to do with who you married.

- A) Modern western marriage is usually envisioned as a joining of two people into a union born of love
- B) Marriage has actually always been about a gathering of people with mutual benefits
- C) People who get married most probably do so in order not to lead a lonely life
- D) Opinions about marriage– whether it is necessary at all – differ widely from culture to culture
- E) What people understood when marriage was mentioned was a little different in the past

29. Though language is a common way for men to undermine women everywhere in the world, ----.

- A) women in various countries are aware of this divide and have started to take action
- B) Indian feminists have highlighted the need to remove gender from swearing
- C) a change in policy is not possible as languages were constructed by men, who held the power in society
- C) a report found more than 2.9m tweets in one week that included gendered insults
- E) it is more so in patriarchal cultures where sexist slurs are at the foundation of toxic masculinity

30. Famous brands, designer brands more so, have been fighting fakes for years, ----.

- A) so second-hand shoppers will have a hard time distinguishing the real ones from fakes
- B) and “genuine-fake” has become an alternative for those who make money from textiles
- C) yet counterfeit fashion goes beyond scoring a goal against the conglomerates
- D) or this so-called “dark trade” has links to human trafficking, labour exploitation and child labour
- E) but today’s counterfeit problem has become second only to drugs in terms of criminal income

31. Although you might think you know when something has made your hair stand on end, ----.

- A) people are very good at distinguishing between different physiological sensations
- B) many mammal species use piloerection to protect themselves from the cold
- C) a study shows we generally can’t tell whether or not we have goosebumps, a feeling of surprise
- D) goosebumps, a feeling of surprise, are no longer thought to have such an important role
- E) it probably takes a level of acuity we don’t have to distinguish between chills and actual goosebumps

32. While a nuclear fusion power plant could create more energy, with no radioactive waste, ----.

- A) a breakthrough fusion experiment has produced a net gain in energy for the second time ever
- B) containing and controlling such a reaction has been proving a monumental problem for physicists and engineers
- C) a challenge for the future is to create a reaction that dwarfs its total energy requirements, and not just the final laser stage
- D) a commercial reactor would have to run nearly continuously with multiple ignitions a second
- E) fusion works differently, by squeezing smaller particles together into larger atoms – the same process that operates within our sun

33. As there are more new ways to reduce your carbon footprint than ever before, and some destinations are planning to ban certain types of luggage on commercial flights, ----.

- A) tour operators are still advising passengers to pack as much as they see fit
- B) it is easy to pack light for a winter sports holiday when you know you can collect most of the gear you will need upon arrival
- C) stuffing your life in a suitcase for a holiday abroad may soon be a thing of the past
- D) every item manufactured for a seaside holiday has a carbon footprint
- E) there is an expectation for travellers to understand and respect the need to carry more luggage

34. Members of generation X– those who were born roughly from 1965 to 1980 – in the US were a little unlucky compared to their peers in Canada ----.

- A) in that college tuition started climbing when it was their time to get higher education
- B) although they were also the worst to suffer from student loan debts
- C) while Gen-Zers today have no prospects of buying even a tiny house
- D) unless, of course, we take into account the difficulties they had to endure
- E) after the arrival of new technologies that made online education possible

35. As our attention span has decreased to seconds and we are too impatient to wait for events to unfold in a video, ----.

- A) making dialogue crisp and clear has become the entertainment world's toughest challenge for script writers
- B) about 50 percent of Americans – and the majority of young people – watch videos with subtitles on most of the time
- C) many modern flat-screen TVs hide their speakers, blasting sound away from the viewer's ears, which makes the problem even worse
- D) nowadays, even on the most expensive TVs, the speakers are tiny and crammed into the back or the bottom of the display
- E) modern TVs have software that automatically calibrate the sound levels for you, meaning that it might solve your hearing problem

36. Pterosaurs, the flying reptiles that lived alongside the dinosaurs, are an evolutionary mystery ----.

- A) since they appear in the fossil record fully formed, some with 33-foot wingspans
- B) because there is very little evidence of the ancestors that came before them
- C) though lagerpetid fossils are in short supply, especially the bones from the animals' heads
- D) as a new fossil provides an elusive glimpse of a group of reptiles most closely related to pterosaurs
- E) while there is new evidence that lagerpetids were actually more closely related to pterosaurs

37-42: For these questions, choose the most accurate Turkish translation of the sentences in English, and the most accurate English translation of the sentences in Turkish.

37. Pakistan has what central Asia needs: The ability to transport central Asian goods south to large ports in Gwadar and Karachi, which might transform the region into one which is "land-linked" as opposed to one that is land-locked.

- A) Pakistan, Orta Asya'nın ihtiyaç duyduğu şeye sahiptir: Orta Asya mallarını Gwadar ve Karaçi'deki büyük limanlara güneye taşıma yeteneği, ki bu bölgeyi denize kıyısı olmayana karşılık "denize kıyısı olan" haline dönüştürebilir.
- B) Pakistan, Orta Asya'da olmayan oradaki malları Gwadar ve Karaçi'deki büyük limanlara güneye taşıma yeteneğine sahip, ayrıca bu da bölgeyi denize kıyısı olmayana karşılık "denize kıyısı olan" haline dönüştürebilir.
- C) Pakistan, Orta Asya'da olmayan oradaki malları Gwadar ve Karaçi'deki büyük limanlara güneye taşıma yeteneğine sahip olduğu için bölge, denize kıyısı olmayana karşılık "denize kıyısı olan" haline dönüştürülebilir.
- D) Pakistan'ın Orta Asya'da olmayan oradaki malları Gwadar ve Karaçi'deki büyük limanlara güneye taşıma yeteneğine sahip olması, o bölgeyi denize kıyısı olmayana karşılık "denize kıyısı olan" haline dönüştürebilir.
- E) Pakistan, Orta Asya'nın ihtiyaç duyduğu birçok şeye sahip olabilecektir: bu da Orta Asya mallarını Gwadar ve Karaçi'deki büyük limanlara güneye taşıma yeteneği ve bu da bölgeyi denize kıyısı olmayana karşılık "denize kıyısı olan" haline dönüştürme potansiyeline sahip olmasını sağlayacaktır.

38. Increased globalisation along with rapidly developing technology is driving the shift to a skills-based job market; in other words, employees are becoming more valuable for the skills they have.

- A) Küreselleşme, hızla gelişen teknoloji ile birlikte arttığı için beceri tabanlı bir iş piyasasına geçiş hızlanıyor; diğer bir deyişle, çalışanlar, sahip oldukları beceriler açısından daha değerli hale geliyorlar.
- B) Hızla gelişen teknoloji ile birlikte artan küreselleşme, beceri tabanlı bir iş piyasasına geçişi hızlandırdığı için çalışanlar, gün geçtikçe sahip oldukları beceriler açısından daha değerli hale gelmeye başladılar.
- C) Hızla gelişen teknoloji ile birlikte artan küreselleşme, beceri tabanlı bir iş piyasasına geçişi hızlandırıyor; diğer bir deyişle, çalışanlar, sahip oldukları beceriler açısından daha değerli hale geliyorlar.
- D) Küreselleşmenin hızla gelişen teknoloji ile birlikte artması, beceri tabanlı bir iş piyasasına geçişi hızlandırdı ve bu da çalışanların sahip oldukları beceriler açısından daha değerli hale gelmesi demek.
- E) Beceri tabanlı bir iş piyasasına geçiş, hızla gelişen teknoloji ile birlikte artan küreselleşme ile hızlanıyor; diğer bir deyişle, çalışanlar, sahip oldukları beceriler açısından gittikçe daha değerli hale geliyorlar.

39. Just like a fridge sucks heat from its interior and dissipates it through coils on its back, a heat pump sucks heat from the outside air and transfers it to the water that gets pumped through the radiators of a central heating system.

- A) Nasıl ki bir buzdolabı içinden ısıyı emip arka tarafındaki bobinler aracılığıyla dağıtıyor, bir ısı pompası da dışarıdaki havadan ısıyı emdiği gibi merkezi ısıtma sisteminin radyatörleri aracılığıyla pompalanan suya aktarır.
- B) Bir buzdolabı, içinden ısıyı emip arka tarafındaki bobinler aracılığıyla dağıtır; benzer bir şekilde bir ısı pompası da dışarıdaki havadan ısıyı emer ve merkezi ısıtma sisteminin radyatörleri aracılığıyla pompalanan suya aktarır.
- C) Isı pompası, dışarıdaki havadan ısıyı emer ve merkezi ısıtma sisteminin radyatörleri aracılığıyla pompalanan suya aktarır; aynı şekilde buzdolabı da içinden ısıyı emip arka tarafındaki bobinler aracılığıyla dağıtır.
- D) Bir buzdolabı, içinden ısıyı emip arka tarafındaki bobinler aracılığıyla dağıtırken bir ısı pompası da dışarıdaki havadan ısıyı emer ve merkezi ısıtma sisteminin radyatörleri aracılığıyla pompalanan suya aktarır.
- E) Tıpkı bir buzdolabının içinden ısıyı emip arka tarafındaki bobinler aracılığıyla dağıtması gibi bir ısı pompası, dışarıdaki havadan ısıyı emer ve merkezi ısıtma sisteminin radyatörleri aracılığıyla pompalanan suya aktarır.

40. Bazı köpek ırklarının diğerlerine kıyasla doğuştan daha saldırgan olduğuna dair çok az tutarlı bilimsel kanıt vardır ancak araştırmalar, ısırıldığı bildirilen ırkların sadece o bölgedeki en popüler ırklar olduğunu göstermektedir.

- A) While there isn't much consistent scientific evidence showing certain dog breeds are more aggressive than others, studies indicate the breeds commonly associated with biting incidents are often just the most popular breeds in that specific area.
- B) There is little consistent scientific evidence that some dog breeds are inherently more aggressive than others, but research suggests that the breeds reported to bite are simply the most popular breeds in that region.
- C) Though consistent scientific evidence is lacking as to the notion that certain dog breeds are intrinsically more aggressive than others, research suggests the breeds frequently implicated in biting incidents are merely the most common ones in that area.
- D) There is little consistent scientific evidence that some dog breeds are inherently more aggressive than others, yet what research suggests is that the breeds reported to bite are simply the most popular ones in that particular region.
- E) Not much evidence can be provided as to the fact that some dog breeds are inherently more aggressive than others but research suggests that breeds that bite the most are simply the ones that are the most popular in their area.

41. Kasabaları harap eden orman yangınları gibi felaketler ve çatıları parçalayan fırtınalar gibi olaylar şiddetlendikçe sigorta şirketleri belirli bölgelerde polise sunmaktan çekildi veya tamir için ödeme yapacakları hasar türlerini kısıtladı.

- A) As catastrophic events such as destructive wildfires and roof-tearing storms become more severe, insurance companies have reduced their willingness to provide coverage in specific areas or have limited the types of damages they will cover for repairs.
- B) Disasters like wildfires that devastate towns and storms that tear apart roofs intensify, so insurance companies have pulled back from offering coverage in certain areas or cut the kinds of damage they will pay to repair.
- C) With the increase in disasters like wildfires that devastate towns and storms that tear apart roofs, some insurance companies are reluctant to provide coverage in specific areas or continue to pay for the repair cost of certain kinds of damage.
- D) As disasters like wildfires that devastate towns and storms that tear apart roofs intensify, insurance companies have pulled back from offering coverage in certain areas or cut the kinds of damage they will pay to repair.
- E) Disasters like wildfires that devastate towns and storms that tear apart roofs have increased in scale, which means insurance companies have been reluctant to offer coverage in certain areas or they cut the kinds of damage they will pay to repair.

42. Hindistan, günümüzde bile hala kast dışı evlilik yapan çiftlere veya köy dışında iş arayan genç kadınlara karşı gerçekleşen namus cinayetleri gibi topluluk içi şiddetle mücadele etmektedir.

- A) In the present day, India is struggling with communal violence, such as honor killings targeting couples who marry across caste lines or young women pursuing employment beyond their villages.
- B) Even in the present day, India continues to be afflicted by communal violence, exemplified by incidents like honor killings targeting couples who marry across different castes or young women who pursue employment beyond their villages.
- C) Even today, India still struggles with communal violence such as honour killings against couples who marry outside their caste or young women who seek employment outside the village.
- D) Communal violence such as honour killings against couples who marry outside their caste or young women who seek employment outside the village keeps afflicting India even in the present day.
- E) What India is still struggling today is communal violence such as honour killings against couples who marry outside their caste or young women who seek employment outside the village.

43-46: Answer these questions according to the passage below.

Today, many of us are desperate for a sun-kissed glow, but in the Middle Age, being pale was the desired look. A pale complexion was a status symbol and indicated that the person was of a higher class, while being tanned implied you were probably out in the fields labouring and therefore of a lower class. Between the 16th and 19th centuries, red rouged cheeks were added to the trend. To achieve this, lead paint was often used in cosmetics, which would whiten the skin and was also known as Venetian Ceruse. As far back as the ancient Romans, Egyptians and Greeks cosmetics containing lead were favoured in order to whiten the complexion. Regular use could cause toxic levels of lead to enter the body and result in muscle paralysis and abdominal pain as well as intellectual impairment. What made this makeup even more deadly was that the lead in Venetian Ceruse could cause blemishes, hair loss and scarring on the skin so users would then apply even more to cover this up. A tragic death caused by this dangerous concoction was that of Countess Maria Coventry. A famed society beauty during the reign of George II, Maria Coventry died at just 27 of lead poisoning, due to the Venetian Ceruse she was so fond of. Elizabeth I was another famous fan of lead makeup and was seen in many portraits with a pale complexion, and potentially used Venetian Ceruse to cover scars left by smallpox.

43. It is clear from the passage that contrary to today's trends about skin colour, ----.

- A) people living in the Mediaeval Ages thought pale skin was associated with manual labour
- B) people living in previous centuries preferred a pale complexion
- C) it was not fashionable to use Venetian rouge to smarten one's appearance
- D) Mediaeval Ages continued the trend in which red rouged cheeks were popular, used by Egyptians
- E) people in the past, even the Queen of England, weren't aware of the harms of sun-tanned skin

44. Which of the following is true about the use of lead in the past to achieve a pale complexion?

- A) Those who used it probably didn't have any idea about the toxicity of lead when used regularly.
- B) Its use was only limited to the members of the royalty.
- C) Ancient Romans were the ones to come up with the name "Venetian Ceruse."
- D) It showed stark differences among people from different classes.
- E) Its use by Egyptians has been considered to be the safest.

45. Which of the following is not among the negative health effects caused by Venetian Ceruse?

- A) Intellectual impairment
- B) Muscle paralysis
- C) A pale complexion
- D) Scarring on the skin
- E) Abdominal pain

46. The passage is mainly about ----.

- A) the way lead was successfully utilized in cosmetics by ancient civilisations
- B) when people first started to use lead paint for cosmetic purposes
- C) a comparison of lead use by people in ancient cultures and those who lived between 16th and 19th centuries
- D) the tragic death of Countess Maria Coventry by excessive use of lead paint
- E) the use of lead in cosmetics in the past and its dire consequences

47-50: Answer these questions according to the passage below.

Brain-machine interfaces are devices that are implanted into the brain to record its electrical signals and send them to a computer. They can also be used for deep brain stimulation, in which electrodes produce electrical impulses to regulate abnormal ones. They have been central to neuroscience research and the treatment of neurological conditions, such as Parkinson's disease, says Charles Lieber, an emeritus professor at Harvard University. Some of these devices use sensors placed on the scalp, but their recording resolution tends to be poor as the skull dampens the brain's electrical signals. To more accurately measure activity deep within the brain, electrodes can be implanted via open-skull surgery. Now, Lieber and his colleagues have developed a device that may overcome the trade-off between an extremely invasive procedure and low recording resolution. The blood vessels in the brain sit a few micrometres away from its neurons, making them a useful place to monitor brain activity. To create a device that can be moved through winding, microscopic blood vessels, the team used a flexible polymer to build a 7-centimetre-long mesh-like probe embedded with 16 electrodes. The team tried the procedure on a group of rats. After making a small incision in a rat's neck, the team guided the probe to the base of the animal's brain using a 10-micrometre-wide catheter. After insertion into a blood vessel, the probe expanded and stuck to the vessel's walls, and its electrodes picked up signals from nearby neurons. By changing the width of the catheter, the team could insert the probe in a range of different blood vessels, with the rats experiencing no noticeable side effects.

47. Which of the following can be inferred from the passage about the new device tested by Charles Lieber and his colleagues?

- A) It necessitates surgeons to perform open-skull surgery.
- B) It has the potential to provide a treatment for Parkinson's disease.
- C) Its implementation in human subjects has produced controversial results.
- D) Scientists are not sure whether it should be tried in humans or not.
- E) The hardest part about its implementation is the application of 10-micrometre-wide catheter.

48. According to the passage, what prompted Charles Lieber and his colleagues to come up with a new device was ----.

- A) the fact that Charles Lieber himself is suffering from Parkinson's disease
- B) the unique variations the electrical impulses displayed when current devices are used
- C) the high quality of resolution obtained from the current devices
- D) the way surgeons make the incision to place implants into the brain
- E) the lack of efficiency in the existing brain-machine interfaces

49. It is clear from the passage that the change in the width of the catheter ----.

- A) didn't produce any good results for the research team, unfortunately
- B) left a negative impact on the way the electrodes picked up signals from nearby neurons
- C) didn't produce any side effects on the rats used in the experiment regarding the new device
- D) allowed the research team to insert the 7-centimetre-long mesh-like probe into a human skull
- E) could have solved the problem of low recording resolution, but didn't

50. One reason why sensors placed on the scalp do not work efficiently is that ----.

- A) the skull reduces the electrical signals emitted by the brain
- B) the scalp needs to be shaved clean, something which patients are reluctant to do
- C) the skull needs to be opened by a painstaking surgical procedure
- D) some people's skulls emit more heat, which reduces the quality of resolution
- E) researchers find it an ineffective way to get hold of electronic signals

51-54: Answer these questions according to the passage below.

Japan's economy is under pressure from rising energy prices and defence costs and the impact of the pandemic. Plummeting birth rates and an ageing population further threaten the sustainability of its labour market. A recent study points to a labour supply shortage of 3.41 million people by 2030, and over 11 million by 2040. Gender inequality is another significant pressure point. Research shows that a gender-inclusive society and workforce leads to innovation and economic growth. However, Japan has one of the lowest levels of gender equality among G7 countries. It has slipped to its lowest ranking yet in the World Economic Health Forum's latest Global Gender Report, particularly in terms of women in leadership positions. Prime Minister Fumio Kishida recently declared that Japan needs to urgently raise its birth rate. He also vowed to increase the percentage of women executives in Tokyo stock exchange-listed companies, from 11.4% to 30% or more, by 2030. A policy draft released recently indicates this will be achieved through leadership quotas legally imposed on listed companies. Japan has tried this countless times, however, and largely failed. As research shows, this is because gender norms are deeply embedded in Japanese society. Gender norms in Japanese society are tightly connected to patriarchal hierarchies that have evolved historically from the influence of Confucianism. The role of a man is linked to being the breadwinner and head of the family. Women, by contrast, are seen as wives and caregivers, ultimately subservient to the head of the family.

51. Which of the following is true about Japan's economy?

- A) It will make a major comeback before 2030.
- B) It is in the worst state among G7 countries.
- C) Prime Minister is to blame for its current state.
- D) It is in a difficult situation due to various reasons.
- E) It is in bad shape mainly due to Confucianism.

52. Which of the following can be inferred about the future of gender equality in Japan from the writer's tone?

- A) It has been under the influence of Confucianism.
- B) It will probably not be in a good position by 2030.
- C) It will likely be the best among G7 countries soon.
- D) It will get better once a lot more women executives are hired by big Japanese corporations.
- E) Political interference and cultural change are the main drivers for its future.

53. Which of the following is the main reason why gender inequality has run rampant in Japanese companies for years?

- A) Its unique position among other G7 countries
- B) Its being one of the drivers for economic instability
- C) That Japanese society is mainly matriarchal
- D) The inability of governments to impose equality
- E) Well-established gender norms in the society

54. According to the passage, legal impositions on Japanese companies to hire more women in executive positions ----.

- A) are becoming popular for the first time in Japan
- B) will yield good results this time
- C) have been tried a lot, but with no tangible result
- D) have been unsuccessful due to financial reasons
- E) will increase the number of women executives by 30%

55-58: Answer these questions according to the passage below.

Although rates of indoor tanning have been dropping in the United States, many people still try to get a tan outdoors. According to a National Cancer Institute analysis of data from the National Health Interview Survey, about 39 percent of women and 29 percent of men in the United States had intentionally sought an outdoor tan in the past year. Yet while bronzed skin may not hurt or peel like a sunburn, it still is not safe, experts say. "If your skin could talk, it would say, 'Ouch!' when you get a tan," Dr. Maral Skelsey, a dermatologist at Georgetown University, said. In fact, she said, skin bronzes precisely because it has been injured – the extra pigmentation is the skin's attempt to protect itself from further damage. Sunburns have long been associated with an increased risk for skin cancer, but tanning raises the risk, too, said Dr. Patricia Farris, a dermatologist in Metairie, La. Tans and sunburns are caused by exposure to two types of ultraviolet rays emitted by the sun. Ultraviolet B rays cause sunburns, and ultraviolet A rays penetrate more deeply and induce tans. Both types of UV rays can cause DNA mutations that raise the risk of cancer, Dr. Farris said. Sunscreens can offer help at this point. "When indoor tanning became vogue, they pushed the narrative that tanning could be done safely as long as you don't burn," she said. "Almost immediately, dermatologists began seeing younger and younger patients with skin cancers and particularly melanoma."

55. Which of the following cannot be said about outdoor tanning according to the passage?

- A) It is perfectly safe unless one has a sunburn.
- B) It is not as harmless as it was promoted before.
- C) It may eventually lead to health complications.
- D) Health professionals cited in the passage advise against it.
- E) It is the final result of exposure to Ultraviolet A rays.

56. It can be concluded from the passage that someone who wants to get an outdoor tan ----.

- A) will definitely end up with developing serious conditions apart from cancer
- B) has already acknowledged the risk of eventually developing skin cancer
- C) is likely to be from the United States, where the majority of people are unaware of its risks
- D) will need to apply a sunscreen that offers both Ultraviolet A and B protection to reduce risk
- E) will know that they will be hospitalized for a skin condition soon after the experience

57. Which of the following is true about outdoor tanning according to the passage?

- A) It became popular after tanning salons in the United States became obsolete.
- B) It actually occurs as a result of an injury in our skin after exposure to sunlight.
- C) Doctors advise it only for people who are afraid of indoor tanning.
- D) Its promotion as a healthy alternative to indoor tanning was a huge success.
- E) It gained popularity after doctors gave conferences on the importance of sunlight for vitamin D.

58. Which of the following best describes the purpose of the author?

- A) To explain in detail how tanning and sunburns occur after tanning
- B) To discuss the advantages of outdoor tanning over sunburns
- C) To compare and contrast tanning and sunburns, with a focus on their health impact
- D) To promote outdoor tanning as a replacement for indoor tanning
- E) To inform the reader about the risks involved in outdoor tanning

59-62: Answer these questions according to the passage below.

There are two interconnected ways of measuring your age. The first is chronological age, which is the easiest to understand. It is really nothing more than how long you have been alive. The most accurate estimate of that is the date and time on your birth certificate. Biological age, on the other hand, reflects the exponential increase in an organism's chances of becoming sick or dying with the passage of time. Basically, this translates to the rate at which your body is losing function. Yet, while we all grow older, we don't all lose functional capacity at identical rates – and the organ systems in our body decline at different speeds. This means that some people's biological age may be younger or older than the average for their chronological age. Take the example of the 70-year-old US marathon runner who set a world record for his age group in 2018, and contrast it with many of his peers who are in delicate health or long-term care. This shows how biological age can be uncoupled from chronological age. There are several ways to estimate biological age. Surprisingly, one of the best is incredibly simple: use your eyes. Research shows that age estimates made by looking at someone are just as good as some more complicated techniques of gauging biological age. Another simple but powerful predictor of biological age is measuring a person's grip strength, which tends to **shrink** with age as they lose muscle mass. Low grip strength is one sign that your biological age is probably higher than your calendar age.

59. Which of the following is true about one's biological age?

- A) It changes from person to person depending on their chronological age.
- B) It is difficult to gauge as people can have similar grip strength in different ages.
- C) It is not as effortless to measure as chronological age.
- D) It is easy to determine as people lose functional capacity at similar rates.
- E) It may appear to be easy to determine, but it is impossible to do so.

60. Why did the writer give the example of a 70-year-old US marathon runner?

- A) To prove that it is possible to measure the biological age of runners
- B) To make a point about the possibility of health benefits of running for the elderly
- C) To discuss whether the elderly should be allowed to run an entire marathon
- D) To demonstrate that biological age can be separated from chronological age
- E) To criticize most elders for not taking up any sport before

61. The underlined word 'shrink' in the passage is closest in meaning to ----.

- A) expand
- B) accelerate
- C) limit
- D) decrease
- E) soar

62. The passage is mainly about ----.

- A) possible ways of measuring one's biological age
- B) the difference between a person's chronological and biological age
- C) the importance of grip strength in older age
- D) how some people become active when they are old
- E) the way in which our chronological age is measured

63-67: For these questions, choose the best option to complete the dialogue.

63. Lois:

— **In my opinion, we are the best country when it comes to cakes and pastries.**

Rudyard:

— ----

Lois:

— **What is that? It doesn't even sound tasty.**

Rudyard:

— **It might not, but they claim it is the best cake in the world.**

Lois:

— **Be as it may, it doesn't change the fact that we are the best in overall taste and variety.**

- A) Norwegians say you should wait until you taste Kvæfjordkake before making such big claims.
- B) There might be a German name for such level of micro nationalism, but I have forgotten.
- C) Some people will claim otherwise. These things are subject to personal gusto.
- D) I think there is a Danish term for this type of behavior. It is hygge, I guess.
- E) The world is abound with people who claim their food is the best, but it is a subjective thing.

64. Marge:

— **I am deeply worried about the fact that climate change and global warming will soon bring the end of the world as we know it.**

Burt:

— **Who knows what else will take place before these two phenomena kill life on Earth?**

Marge:

— **What might be a more serious threat than these two?**

Burt:

— ----

Marge:

— **I guess you are right. We never focus on events outside our planet.**

- A) With the world leaning towards leaders with dictatorial proclivity, I am expecting a nuclear war sooner than later.
- B) Lots of things actually. One specific event might be the loss of biodiversity due in huge part to human activities.
- C) I have just read an article which says that a "black hole assassin" ripped apart a massive star, just like our Sun.
- D) What about satellites littering the sky? They might well fall down and create huge impact, such as tsunami or earthquakes.
- E) I am expecting a huge terrestrial event such as the ancient continental drift. Such an event would have cataclysmic consequences.

65. Daphne:

— **It is crazy how world trade can be so vulnerable.**

Tom:

— **What do you mean? Has something happened that I missed?**

Daphne:

— ----

Tom:

— **How come? Isn't it working via sea water?**

Daphne:

— **Not really. A highly unusual drought, right in the middle of wet season, has lowered water levels in two reservoirs that supply the canal, which has created the recent traffic.**

- A) This is nothing like the situation when a large ship had stopped the traffic in the Suze Canal.
- B) The Panama Canal is essential to global trade, but a recent drought has left large numbers of ships waiting to pass along it.
- C) You haven't been reading the news, I guess. The recent drought all over the world has caused great concerns for food trade.
- D) Nothing to worry about at the moment, but there has always been a kind of vulnerability in world trade.
- E) You always miss current events, but that's not the issue. There will be trade quotas in near future due to ongoing war.

66. Dave:

— **I can't understand the extreme reaction given to football players when the team they are playing for is defeated.**

Kurt:

— **It is obvious, actually. There is eye-watering pay inequity between a top-class footballer and an average worker.**

Dave:

— ----

Kurt:

— **You are right, but what you say will only happen in an ideal world.**

Dave:

— **Yes, there is that, so footballers will always be protested.**

- A) I wish there was a middle way between this wage gap issue. People should be paid much higher than they do.
- B) Why should we have to deal with these issues in the 21st century? Surely, we should have gone beyond this.
- C) Is that so? I am not much of a football fan. Can you give me an example about the wages of a well-paid player?
- D) This is not the issue in my opinion. The world is going through an unprecedented era of freedom to offend other people.
- E) Yes, but this doesn't justify the overreaction that fans give to football players, who are also human beings.

67. Student:

- **Sir, I have some concerns over the new variant of COVID-19, such as whether we will be wearing masks again.**

Professor:

- **As far as I am concerned, the days when we will be wearing masks again aren't to come soon.**

Student:

— ----

Professor:

- **That is because most of the world got immunity against the virus one way or the other, so I am not expecting a new pandemic.**

- A) I am relieved to hear it from you, but how can you be so certain?
B) Is this because you are among the people who deny the existence of the virus?
C) Do you also think we will never have to get COVID boosters anymore?
D) How do people in other countries react to such prospects? Do you have any idea, sir?
E) However much I like your answer, I cannot help but feel the panic about yet another pandemic.

68-71: For these questions, choose the best rephrased form of the given sentence

68. One of the common misconceptions about empathy is that you need to have lived through what the other person has experienced to understand them, but simply having the same experiences as another person is not enough to understand them.

- A) One prevalent misunderstanding concerning empathy is that in order to comprehend someone, you must have personally undergone similar situations they have; however, merely sharing these experiences with another individual is insufficient for true understanding.
B) One of the common misconceptions about empathy is that you need to have lived through what the other person has experienced to understand them, since merely having the same experiences as another person is not enough to understand them.
C) Although it is a common misconception about empathy that you must have lived through the same experiences as the other person to understand them, simply sharing those experiences with another person isn't sufficient for understanding them.
D) Merely having the same experiences as another person is not enough to understand them, so empathy is widely misunderstood, with one of the most common misunderstandings being one must have lived through the same experiences as the other person to understand them.
E) A widespread misconception about empathy is that you must have personally gone through similar situations as someone else in order to grasp their perspective, yet simply sharing these experiences with another person is not enough to achieve genuine understanding.

69. Among the general population, brother-sister marriages occurred frequently during the time the Romans controlled Egypt, but they were rarer in earlier time periods, according to ancient records.

- A) Ancient records clearly show that brother-sister marriages were not as common among the general population in earlier times as they were during the time Romans controlled Egypt.
- B) While brother-sister marriages occurred more frequently among the general population during the time the Romans controlled Egypt, they weren't necessarily rarer in earlier time periods as documented in ancient records.
- C) When Roman controlled Egypt, brother-sister marriages were popular among general population; still, as far as ancient records are concerned, these things happened more in earlier time periods.
- D) During the period when the Romans governed Egypt, sibling marriages were common among the general populace, as indicated by historical records; however, such unions were less frequent in earlier eras.
- E) Although brother-sister marriages occurred much more frequently among the general population during the time when the Romans controlled Egypt, they were a lot rarer in earlier time periods as per ancient records.

70. Despite claiming numerous high-profile victims over the years – including young, otherwise healthy people – the mystery of what causes ALS remains.

- A) In spite of its history of affecting numerous individuals over the years, including young and healthy individuals, the enigma of what leads to ALS continues to persist.
- B) The enigma of what leads to ALS continues to persist, but it has claimed numerous high-profile victims over the years, including young and otherwise healthy individuals.
- C) It wouldn't be surprising to see the enigma of what leads to ALS continue if it hadn't affected numerous high-profile victims over the years, including young and otherwise healthy individuals.
- D) As it has claimed many high-profile victims over the years, including young and otherwise healthy individuals, people find it difficult to understand why what causes ALS is still a mystery.
- E) That ALS has claimed many high-profile victims over the years, including young and otherwise healthy individuals doesn't change the fact that what leads to the condition is still unknown.

71. In addition to covering a wide range of topics and audiences, graphic novels provide a way to delve into topics beyond what is possible in a time-constrained class.

- A) Graphic novels not only span a broad array of subjects and cater to diverse audiences, but they also offer a means to delve into topics that extend beyond the limitations of a time-restricted classroom.
- B) Besides encompassing a diverse array of subjects and dedicated readership, graphic novels offer a useful means to explore topics that go beyond the scope of a time-limited classroom.
- C) In addition to encompassing a diverse array of subjects and readers from all ages, graphic novels offer an avenue to delve into topics that surpass the scope of a time-limited classroom.
- D) What graphic novels do is to cover a diverse range of topics and readers, as well as offering a new means to delve into topics that extend beyond the limitations of a classroom.
- E) If it weren't for graphic novels, we wouldn't be able to delve into topics that extend beyond the limitations of a time-restricted classroom, nor would we have a wide range of topics and readers.

72-75: For these questions, choose the best option to complete the missing part of the passage.

72. The United States is well past a boom in consumption during the pandemic that pulled in \$536.8 billion worth of imports from China in 2022. ---- That lowers demand for goods from Chinese factories — which had already been weakened by a swath of tariffs that former President Donald J. Trump started and the Biden administration has largely kept in place.

- A) When considering the economic relationship between the two countries, it is important to recognize that the United States has played some role in China's troubles.
- B) For years, China's leaders have said they want to rely more on the country's households to drive economic growth, but they have taken few steps to support domestic consumption.
- C) An export-based Chinese recovery will run up against a world that is reluctant to become ever more dependent on China for manufactures, and that becomes a source of tension.
- D) This year, with home offices and patios stuffed full of furniture and electronics, Americans are spending their money on cruises and Taylor Swift tickets instead.
- E) The U.S. economy is composed of millions of companies with particular concerns, and some may have more to worry about as China's economy flounders, or struggles.

73. Recently, the "lazy girl job" has had a sweeping effect over social media. In a video, a 26-year-old social media creator, who coined the term, described this kind of role as "basically something you can just quiet quit" while making a comfortable salary and having excellent work-life balance. If it sounds like an ideal job that anyone can do, it is — yet the user wrapped it as a "girl" phenomenon. It was one of the reasons the term went viral. ---- In the past month, we have seen the rise of "girl math", which allows shoppers to justify pricey purchases with a bit of number crunching; and "girl dinner", in which meagre snack platters constitute a full dinner.

- A) Lazy girl jobs are just one instance of a parade of content recently branded as "girl" trends.
- B) Just as easily as women, men can have good, low-stress jobs.
- C) These creators are onto something — branding them as girl trends is a smart move if they want maximum impact.
- D) In many cases, there's very little inherently gendered about these viral girl trends.
- E) When something is labelled as a 'girl' thing, it creates an immediate sense of relatability.

74. The Dutch capital, Amsterdam, is one of the most-visited cities in Europe, with its 800,000-person population welcoming up to 20 million tourists a year. But despite its world-class museums, achingly beautiful green spaces and tranquil waterways, Amsterdam has also earned a raunchy reputation, quite notorious in layman's terms, as Europe's most liberal party capital. ---- A new series of measures is being implemented to "maintain the quality of life in Amsterdam" while "working to prevent tourism that causes nuisances". The city council banned cruise ships from its city centre in July to prevent over-tourism in its most popular areas.

- A) And now, the city officials are trying new methods to clean up its image.
- B) Visitors will remain welcome, but not if they misbehave and cause nuisance.
- C) Of course, the Dutch capital has always been much more than just a place to let loose.
- D) The Netherlands — and Amsterdam in particular — is one of the world's most bike-friendly destinations.
- E) Amsterdam is renowned for its many world-class museums and galleries.

75. The Netherlands is a small, densely populated country, with more than 1,300 inhabitants per square mile. ---- Yet it is the globe's number two exporter of food as measured by value, second only to the United States, which has 270 times its landmass.

- A) The Netherlands has become an agricultural giant by showing what the future of farming may look like.
- B) They have almost completely eliminated the use of chemical pesticides on plants in greenhouses.
- C) It is devoid of almost every resource long thought to be necessary for large-scale agriculture.
- D) Since 2009 Dutch poultry and livestock producers have cut their use of antibiotics by as much as 60 percent.
- E) In the country's principal farming regions, there are many potato patches or no greenhouses.

76-80: For these questions, choose the irrelevant sentence in the passage.

76. **(I)** In a young, healthy person, the immune system is routinely deployed to maintain order – patching up damage and getting rid of, or shooing off infections. **(II)** But as we get older, or when we are in poor health, these inflammatory responses can pass a certain critical threshold – a point beyond which they go into overdrive, releasing a cascade of potent chemicals that rampage around the body, destroying healthy cells and mutilating our DNA. **(III)** Enter "inflammaging" – the simmering backdrop of inflammation that accompanies the ageing process, and this is where the skin comes in. **(IV)** Locally, these chemicals degrade collagen and elastin, causing further skin thinning, wrinkles, and reduced elasticity. **(V)** The latest research suggests that wrinkly, diseased, or damaged skin becomes part of this system of inflammation, releasing a chemical cocktail that leads to yet further damage and inflammation.

A) I B) II C) III D) IV E) V

77. **(I)** Alpha-gal may sound empowering, but the nickname, short for galactose-alpha-1, 3-galactose, is a sugar molecule that might just cause you to become allergic to meat. **(II)** Some patients have had to be given life support because their blood pressure is so low that they are in eminent danger of dying. **(III)** The sugar molecule is spread from the Lone Star tick bite, named for the single star-shaped spot marking on its back. **(IV)** A new study by the Centers for Disease Control and Prevention found that the number of suspected cases in the United States has increased substantially since 2010. **(V)** Moreover, some were identified in states not typically known as habitats for these bloodsucking parasites.

A) I B) II C) III D) IV E) V

78. **(I)** Most of us have a rough map of the world in our minds that we use any time we think about places. **(II)** However, these mental maps we created in our minds aren't necessarily reliable. **(III)** North Americans tend to think of Africa as a located almost entirely in the southern hemisphere, similar to South America. **(IV)** In fact, many of the maps in our heads share the same errors, some of which are quite large, and surprisingly resistant to correction. **(V)** For instance, we all know that South America is south of North America, of course, but you may be surprised by the fact that virtually the entire South American continent is east of Florida.

A) I B) II C) III D) IV E) V

79. **(I)** When hospitals were filled beyond capacity and bed ventilators were in short supply during the pandemic, many people got a glimpse of how devastating lung diseases can be. **(II)** Unfortunately, lung function is not only harmed by respiratory illnesses like COVID-19, but also declines with age. **(III)** Swelling or inflammation caused by disease, environmental exposures, or advanced age can also partially obstruct breathing passages and limit airflow, research shows. **(IV)** Past studies, including a 2022 analysis on why some ethnic groups suffer worse lung disease outcomes than others, and pooled research that provides important data on chronic lower respiratory diseases, have measured lung health in people before. **(V)** Now, a new study, shows how consuming nutrients called omega-3 fatty acids can reduce such inflammation and slow declining lung function.

A) I B) II C) III D) IV E) V

80. **(I)** For many workers, Covid-19 altered our attitudes towards our jobs and how we do them. **(II)** First, the dissolution of personal and professional boundaries during home working may have played a significant role. **(III)** The conditions of the past three years catalysed a full re-evaluation of careers and values, and subsequently dislodged some established traditions that have slowed down workplace progress. **(IV)** In the new world of work, many employees have received what they've wanted from their employers – new ways of getting things done including flexible hours, remote working and even shortened workweeks. **(V)** Despite this, however, one entrenched feature of business culture that has proved tough – and in some cases impossible – to shift, is presenteeism.

A) I B) II C) III D) IV E) V