

**A. For questions 1-16, choose the BEST option to fill in the blanks.**

1. The committee released a \_\_\_\_\_ agenda for the conference, with several sessions still pending confirmation based on speaker availability and logistic considerations.  
a. definitive      b. biased      c. tentative      d. turbulent
2. The \_\_\_\_\_ results of the study were promising, but further investigation is required to validate the initial findings, refine the methodology, and explore any variables that could influence the final outcomes.  
a. intermittent      b. preliminary      c. resilient      d. vigorous
3. The recent investment in sustainable practices has helped \_\_\_\_\_ the local agricultural industry, which has led to higher yields and increased profitability.  
a. exemplify      b. complicate      c. undermine      d. revitalize
4. The study meticulously examined the \_\_\_\_\_ of the new drug in treating chronic pain by providing substantial evidence to support its broader use in clinical settings for long-term relief.  
a. efficacy      b. vibrancy      c. transparency      d. clarity
5. The landscape changed \_\_\_\_\_ after the volcanic eruption as ash covered the surrounding area and altered the vegetation permanently.  
a. deliberately      b. rigorously      c. hesitantly      d. dramatically
6. The renowned artist was expected to \_\_\_\_\_ at the prestigious gala, but he was unable to participate, and the event lacked the anticipated energy and excitement.  
a. bring about      b. show up      c. run across      d. go through
7. Historically, scholars \_\_\_\_\_ solely on physical archives for research, but in recent years, they \_\_\_\_\_ digital databases that have revolutionized academic inquiry.  
a. have relied / would embrace      b. were relying / embraced  
c. used to rely / have embraced      d. could rely / had embraced
8. The team's dependence on outdated software \_\_\_\_\_ to inaccurate results in the final report they prepared. They \_\_\_\_\_ more advanced tools for data analysis.  
a. led / should have employed      b. leads / must have employed  
c. will lead / may have employed      d. had led / would have employed
9. During the steam era, with new railroads \_\_\_\_\_ across all Europe and the US, engineers started \_\_\_\_\_ even more uses for the steam engines.  
a. to spread / finding      b. having spread / to have found  
c. spreading / to find      d. spread / having found

10. During the championship match, the home team players \_\_\_\_\_ by their enthusiastic fans, and the coach emphasized the importance of \_\_\_\_\_ every opportunity to secure a victory.

a. had been cheered / taken

b. were cheered / taking

c. have been cheering / to take

d. are cheering / take

11. \_\_\_\_\_ even monarchs and prominent political figures engaged in daily life, the concept of daily life refers specifically to the experiences of ordinary individuals who became central to much of the historiography of the late 20th century.

a. Seeing that

b. For

c. Unless

d. While

12. Physical exercise is essential for a healthy lifestyle as it helps improve cardiovascular health and boosts mental well-being. \_\_\_\_\_, individuals should prioritize a balanced diet to achieve overall well-being.

a. Additionally

b. Nevertheless

c. Though

d. As much as

13. The company is introducing flexible working hours to accommodate diverse schedules and improve overall productivity \_\_\_\_\_ employees can better manage their work-life balance.

a. in case

b. otherwise

c. so that

d. provided that

14. Liquid makes up seventy percent of the surface of the earth, \_\_\_\_\_ there are more than a billion people who are affected by water shortage every year.

a. instead

b. as if

c. just as

d. yet

15. Scientists emphasize the importance of preserving endangered species, particularly in areas \_\_\_\_\_ ecosystems are fragile and vulnerable to climate change.

a. what

b. why

c. where

d. who

16. Yareta, a cushion-like plant in South America, is very strong \_\_\_\_\_ a confluence of factors. Its compact structure, for one thing, helps trap heat, and the more compact the plant, the better it can defend itself.

a. due to

b. in addition to

c. so as to

d. contrary to

**B. For questions 17-26, read the paragraphs (Paragraph I - Paragraph II) and choose the correct option to fill in the blanks.**

### **Paragraph I**

The earliest civilizations arose in regions conducive to high agricultural productivity, (17) \_\_\_\_\_ facilitating the sustenance of concentrated populations. In the Old World, they appeared (18) \_\_\_\_\_ the Tigris-Euphrates river system, northern India, and northern China. The emergence of specialized crafts, the flourishing of trade, the inception of writing, and the practice of providing monarchs with elaborate burials were notable developments during this period. (19) \_\_\_\_\_, each civilization possessed distinctive characteristics that were deeply embedded in its unique cultural heritage and environmental context. Life in Ancient Egypt was fundamentally shaped by the Nile River, which offered a (20) \_\_\_\_\_ water supply and fertile soils. Consequently, this allowed agricultural production in the surrounding arid regions. Navigation through the river was enabled by the fact that vessels proceeded northward with the current. Beginning in the 5<sup>th</sup> millennium BC, agricultural communities situated near the banks of the Nile progressively coalesced into a cohesive cultural, political, and economic entity. This process of unification was encouraged by commerce contacts and the need to regulate the floodwaters of the Nile. In order to harness the advantages presented by the annual inundation of the river, communities (21) \_\_\_\_\_ to collaborate in the construction of dams and flood basins.

- |                     |                        |                    |                  |
|---------------------|------------------------|--------------------|------------------|
| 17. a. thereby      | b. no matter           | c. on the contrary | d. owing to      |
| 18. a. with         | b. along               | c. toward          | d. at            |
| 19. a. Therefore    | b. Instead             | c. Nonetheless     | d. For instance  |
| 20. a. vague        | b. consistent          | c. respective      | d. decadent      |
| 21. a. had required | b. should be requiring | c. required        | d. were required |

### **Paragraph II**

The development of spacecraft and satellite technologies, (22) \_\_\_\_\_ by intense international competition and insatiable scientific curiosity, has significantly expanded our understanding of the universe. As private companies (23) \_\_\_\_\_ their influence and compete for dominance in the lucrative space industry, the boundaries of what is possible are constantly being redefined. However, the expansion of human activity beyond Earth presents profound ethical and logistic challenges, particularly (24) \_\_\_\_\_ the potential militarization of space, where weapons deployment or geopolitical tensions could destabilize global security. Furthermore, the increasing commercialization of space may result (25) \_\_\_\_\_ a race for resources, by little concern for international agreements or the long-term impacts on planetary ecosystems such as the contamination of celestial bodies or orbital debris accumulation. Lacking strict oversight, private enterprises risk (26) \_\_\_\_\_ unsustainable practices neglecting environmental responsibilities, which could jeopardize not only future missions but also the shared heritage of space exploration.

- |                       |                  |                  |                   |
|-----------------------|------------------|------------------|-------------------|
| 22. a. driving        | b. driven        | c. having driven | d. been driving   |
| 23. a. attribute      | b. deduce        | c. nominate      | d. extend         |
| 24. a. in relation to | b. as opposed to | c. in spite of   | d. regardless of  |
| 25. a. on             | b. with          | c. by            | d. in             |
| 26. a. creating       | b. being created | c. to create     | d. to be creating |

**C. For questions 27 - 31, choose the option which is closest in meaning to the sentence given in bold.**

**27. The Hippocratic Oath provides a moral compass for healthcare professionals, urging them to act in the best interest of patients while avoiding any harm.**

- a. It is a fact that the Hippocratic Oath is pivotal in establishing the balance between demanding patients and doctors.
- b. As a guiding principle for physicians, the Hippocratic Oath emphasizes the importance of intensive patient care and the prevention of harm.
- c. The Hippocratic Oath challenges doctors to balance medical decisions with ethical responsibility while maintaining professional integrity.
- d. The Hippocratic Oath acts as a moral guide for medical professionals and compels them to prioritize the welfare of patients and refrain from causing harm.

**28. The more companies invest in digital marketing strategies, the more their customer engagement and brand visibility increase.**

- a. As companies modify their investments in digital marketing activities, customer loyalty and brand visibility are likely to be upgraded.
- b. Since more and more companies are incorporating new digital marketing tools, customer satisfaction and brand value are steadily rising.
- c. The greater the investment companies make in digital marketing strategies, the more pronounced the growth in customer interaction and brand recognition.
- d. The more resources companies allocate to digital marketing, the faster they can amplify customer loyalty and their influence in the market.

**29. Even though California has implemented strict fire prevention measures, the frequency and intensity of wildfires continue to rise due to climate change and dry conditions.**

- a. While California has encountered difficulties in reducing wildfire risks, the implementation of more effective fire prevention strategies can play a significant role in lessening the impacts of climate change.
- b. Should California address the root causes of drought conditions, its fire prevention measures could become more efficient in reducing the growing wildfire threat.
- c. The state might be better able to combat the growing wildfires and protect its community if only California's fire prevention efforts were more effective.
- d. Despite California's extensive fire prevention efforts, the region continues to face growing challenges with escalating wildfires, which are exacerbated by climate change and prolonged drought conditions.

**30. Neither high salaries nor fancy benefits guarantee employee satisfaction; a positive work environment and meaningful work are equally important.**

- a. Employee satisfaction is shaped by both a competitive work environment and fair compensation, but it also requires effective management.
- b. Employees may receive substantial pay and benefits; nevertheless, a lack of job satisfaction often stems from weak workplace interactions.
- c. Employee satisfaction cannot be taken for granted by simply relying on generous pay or perks; just as crucial are a supportive workplace culture and purposeful tasks.
- d. High salaries and benefits may attract most of the employees, but long-term job satisfaction is supposed to be shaped by a rewarding work environment.

**31. If renewable energy had been adopted more widely in the past, the effects of global warming would likely have been less intense.**

- a. Even if renewable energy had been adopted in earlier times, global warming would still be just as severe as it is now.
- b. The adoption of renewable energy in previous decades might have only slightly altered the prolonged effects of global warming.
- c. Had renewable energy been implemented on a larger scale in earlier times, the severity of global warming might have been reduced.
- d. When renewable energy forms were utilized more frequently in the past, the effects of global warming were less intense.

**D. For questions 32- 35, choose the BEST option to complete the dialogues.**

**32. Student:** Good morning. I'd like some information about the Erasmus program and the process of studying abroad.

**Erasmus Officer:** Of course! The Erasmus program provides students with a great opportunity to study in a European country for a semester or an academic year. Is there a specific country or university you're considering?

**Student:** Yes, I'm thinking about applying to a university in Germany. What are the main steps I need to follow to ensure my application is successful?

**Erasmus Officer:** \_\_\_\_\_

- a. You should focus on improving your language skills only if you plan to take courses in your native language.
- b. The most important one is to submit your application early because spots fill up quickly, especially for highly preferred universities.
- c. Have you decided on the courses you'd like to take and whether they align with your current academic program?
- d. You might need to look for accommodation early since finding a place to stay can be challenging in some cities, right?

**33. Patient:** Do you think superstitions, like the idea that breaking a mirror brings seven years of bad luck, have any real impact on people's lives?

**Psychologist:** Superstitions can sometimes reflect deeper psychological needs, such as a desire for control or understanding in uncertain situations. How do you feel about them?

**Patient:** \_\_\_\_\_.

**Psychologist:** That's a common coping strategy. It can be helpful to understand what those superstitions provide for you emotionally, as that might offer insight into other ways to manage those feelings effectively.

- a. I do not think superstitions have any real effect on our lives
- b. To my mind, they bring people together culturally, which can be comforting
- c. Even though I know they're not logical, I sometimes rely on superstitions when I'm anxious
- d. I think breaking a mirror is the most famous superstition, but I don't take it seriously

- 34. Sophia:** Dr. Carter, welcome to our program. I'd like to ask about the influence of technology on mental health, particularly among young adults. How does increasing technology use affect them?
- Dr. Carter:** The impact is multifaceted. On the positive side, technology provides unprecedented access to mental health resources and support networks. However, excessive screen time can contribute to challenges such as increased anxiety, sleep disturbances, and reduced attention spans.
- Sophia:** \_\_\_\_\_?
- Dr. Carter:** Absolutely. Promoting digital well-being through education, setting clear boundaries for screen time, and encouraging self-regulation in technology use are essential steps in fostering a balanced relationship with digital tools.
- Should we consider banning the use of social media entirely to address these challenges
  - Are there specific strategies to mitigate these negative effects and encourage healthier digital habits
  - What strategies would you recommend to promote healthier digital habits among individuals
  - What type of technological developments introduce entirely new approaches to mental health support
- 35. Emily:** Early childhood education plays a critical role in shaping a child's future development.
- Mark:** Exactly. It lays the foundation for cognitive, social, and emotional growth and prevents the gaps that could occur in a child's achievement.
- Emily:** That's a great point. How do you think early education programs can effectively address those gaps?
- Mark:** \_\_\_\_\_
- I believe early education programs are more effective when they prioritize cognitive skills as they are the key to academic success.
  - In my opinion, they ensure that children are better prepared for academic challenges by targeting areas where they might struggle.
  - I think early childhood education should concentrate primarily on emotional development, rather than academic achievement.
  - To my mind, extracurricular activities alone are insufficient to close academic achievement gaps.

**E. For questions 36 – 38, choose the irrelevant sentence in the paragraph.**

- 36. (I)** Bullying, whether physical, verbal, or cyber, has become a pervasive issue in schools and online platforms. **(II)** Therefore, it is more common now to see victims of bullying experiencing emotional distress, low self-esteem, and difficulty concentrating on their studies. **(III)** In response, schools are increasingly adopting anti-bullying campaigns to raise awareness and promote kindness among students. **(IV)** Bullying behavior is often linked to a lack of proper parental guidance and discipline.
- a. I                      b. II                      c. III                      d. IV
- 37. (I)** Modern psychology emerged as a scientific discipline in the late 19th century. **(II)** Researchers like Sigmund Freud and Carl Jung, in particular, laid the foundation for understanding the human mind and its complexities. **(III)** Behavioral therapy, which focuses on modifying specific actions, has been effective in treating phobias and anxiety disorders. **(IV)** Freud's and Jung's theories also highlighted the critical role of early childhood experiences in shaping an individual's personality and behavior.
- a. I                      b. II                      c. III                      d. IV
- 38. (I)** French cuisine has a long and rich history, deeply influenced by regional ingredients and the cultural exchanges between France and its neighboring countries. **(II)** The development of French culinary techniques, such as the art of sauce-making, dates back to the Renaissance period and has been passed down through generations of chefs. **(III)** Additionally, the production of traditional beverages has always been a key component of French gastronomic culture, with each region producing unique varieties to complement local dishes. **(IV)** Culinary schools today attract French students, eager to master game-changing techniques and innovate new ones.
- a. I                      b. II                      c. III                      d. IV

**F. For questions 39 -41, find the sentence or clause that BEST completes the paragraph.**

**39.** The concept of emotional intelligence (EI) has gained significant attention in recent years, particularly in the fields of psychology and business. EI refers to the ability to understand, manage, and regulate both one's own emotions and those of others. This skill is believed to play a crucial role in fostering effective communication, building strong relationships, and enhancing leadership capabilities. \_\_\_\_\_ Given its significance, many organizations now prioritize emotional intelligence alongside technical skills during the hiring process.

- a. It encompasses self-awareness, empathy, and social skills, which are vital for interpersonal success.
- b. Emotional intelligence is a relatively new idea that still lacks practical applications in the real world.
- c. Unlike traditional measures of intelligence, EI is difficult to quantify or assess through standardized testing.
- d. Many researchers argue that EI is less important than cognitive intelligence in professional settings.

**40.** Mindfulness, a practice rooted in ancient traditions, has become increasingly popular in modern psychology and wellness programs. It involves focusing one's awareness on the present moment while calmly acknowledging and accepting one's feelings, thoughts, and bodily sensations. Research has shown that mindfulness can reduce stress, improve concentration, and enhance overall mental well-being. \_\_\_\_\_ Due to these benefits, mindfulness programs are now widely implemented in schools, workplaces, and even healthcare settings to promote healthier lifestyles.

- a. Many people find mindfulness difficult to practice due to their hectic daily schedules.
- b. Its growing popularity can be attributed to its proven benefits across various aspects of life.
- c. Critics argue that mindfulness is more of a trend than an effective psychological tool.
- d. Unlike other techniques, mindfulness focuses on physical relaxation, subordinating emotional well-being.

**41.** Anti-aging products have become increasingly popular in recent years as people strive to maintain a youthful appearance for as long as possible. These products often contain ingredients that are believed to reduce the appearance of wrinkles and fine lines, enhance skin elasticity, and promote a healthy complexion. However, experts argue that the real key to anti-aging lies not just in creams and serums, but in lifestyle choices. Regular exercise, a balanced diet, and sufficient sleep play crucial roles in slowing the aging process. Additionally, some researchers suggest that mental well-being is just as important, as stress and negative emotions can accelerate the visible signs of aging. \_\_\_\_\_.

- a. Thus, although some experts support that long term outcomes are unknown, anti-aging treatments are always effective for everyone
- b. Therefore, while many people rely on cosmetic solutions, a holistic approach with healthy habits may be more beneficial
- c. Consequently, the desire for eternal youth can lead to unrealistic expectations, as people may think they can escape aging
- d. There is no scientific evidence supporting the effectiveness of anti-aging products, despite the widespread marketing claims that these products can slow down the process



**G. For questions 42 - 50, read the texts (Text I-Text II-Text III) and answer the questions.**

**TEXT I**

In an era marked by rapid urbanization and climate change, the concept of "sponge cities" has emerged as a compelling solution to address the myriad challenges facing urban areas worldwide. Sponge cities, also known as "sponge city initiatives" or "sponge urbanism," are urban development strategies designed to mimic the natural functions of a sponge. These innovative urban designs prioritize sustainable water management to enhance resilience, mitigate flooding, and promote environmental sustainability. The concept draws inspiration from the way natural ecosystems, like wetlands and forests, manage water. One of the primary benefits of sponge cities is flood mitigation. Urban areas with vast expanses of concrete and limited green spaces often struggle to absorb excess rainwater. This leads to flash floods and overwhelmed drainage systems. Sponge cities incorporate permeable pavements, green roofs, and retention ponds to absorb rainwater, reducing the risk of flooding. Sponge cities also focus on reusing rainwater as a valuable resource. By collecting and treating rainwater, these cities can reduce their dependence on dwindling freshwater sources. This practice also lessens the strain on water treatment facilities and decreases the likelihood of water shortages during droughts. What is more, traditional urban surfaces like roads and parking lots contribute to water pollution by allowing contaminants to flow directly into water bodies. Sponge cities, with their green infrastructure and filtration systems, help improve water quality by trapping and treating pollutants before they reach rivers and lakes. Lastly, sponge cities can lead to cost savings in the long run. They contribute to economic stability and sustainability by reducing flood damage, lowering water treatment costs, and creating green jobs.

**42. What design rationale forms the basis of sponge city initiatives in urban planning?**

- a. Prioritizing rapid development over current environmental considerations
- b. Focusing on replicating natural ecosystems to boost water management
- c. Expanding green spaces rather than tackling water-related challenges
- d. Relying on the adoption of cost-effective materials in urban construction

**43. According to the text, which of the following is NOT an advantage of sponge city initiatives?**

- a. They collect rainwater to reduce freshwater use and prevent water shortages.
- b. They filter pollutants before they enter natural water bodies by using green infrastructure.
- c. They support urban biodiversity by building more green spaces like parks and wetlands.
- d. They lower the risk of flooding by using water-absorbing surfaces and sustainable infrastructure.

**44. Which of the following is a potential long-term economic benefit of sponge cities?**

- a. Increasing private investments in infrastructure maintenance and repairs
- b. The creation of green jobs and a reduction in flood-related damages
- c. Generating higher incomes for the government, leading to economic growth
- d. Promoting eco-friendly career opportunities for those affected by floods



## **TEXT II**

Self-driving cars, also known as autonomous vehicles (AVs), use artificial intelligence (AI), sensors, and cameras to navigate roads without human drivers. According to a 2023 report by the International Transport Forum (ITF), self-driving cars could reduce accidents by up to 90%, as most crashes are caused by human error. AVs could also improve mobility for elderly and disabled people, giving them more independence. However, despite these benefits, self-driving technology faces serious challenges that must be solved before it becomes widespread. One major issue is safety, as self-driving cars can still struggle in bad weather conditions, heavy traffic, and unexpected road situations. For example, heavy rain or fog can interfere with a car's sensors, making it difficult to detect obstacles. Additionally, pedestrians, cyclists, or animals may behave unpredictably, which AI systems may not always recognize in time. A well-known incident in 2018 involved a self-driving Uber car failing to detect a pedestrian crossing the street, leading to a fatal accident. Until AI improves, self-driving cars may not always react as quickly or intelligently as human drivers in emergencies. Another major concern is cybersecurity. Since AVs rely on software and internet connections, they are vulnerable to hacking. If a hacker gains access to a car's system, they could disable brakes, take control of steering, or even cause accidents on purpose. In 2015, cybersecurity researchers Charlie Miller and Chris Valasek demonstrated how they could remotely hack a Jeep Cherokee, taking control of its acceleration, brakes, and steering while it was being driven. This experiment showed the serious risks of remote cyberattacks on vehicles and forced automakers to improve their security measures. Such vulnerabilities raise concerns about terrorism, car theft, and data privacy, as self-driving cars collect personal information about passengers, locations, and driving habits. Furthermore, self-driving cars raise significant ethical dilemmas. One major issue is decision-making in life-threatening situations—should the AI prioritize the safety of the driver, passengers, or pedestrians? Without clear ethical guidelines, it is uncertain how AI systems will be programmed to handle such scenarios. Additionally, questions of responsibility arise if a self-driving car causes an accident. Should blame fall on the car's owner, the manufacturer, or the company that designed the AI? Another ethical concern is the impact on employment. As autonomous vehicles replace human drivers, millions of workers in trucking, taxis, and delivery services may lose their jobs, raising concerns about economic inequality and social stability. The long-term consequences of these ethical challenges must be carefully considered before self-driving cars become widespread.

**45. According to the text, what is one reason why safety concerns remain a major challenge for self-driving cars?**

- a. AI systems may struggle to detect obstacles in unpredictable situations.
- b. Self-driving cars lack any automated emergency response systems.
- c. Autonomous vehicles are less reliable in areas with poor navigation signals.
- d. Self-driving cars require frequent software updates to ensure safety.

**46. What does the 2015 Jeep Cherokee hacking experiment demonstrate about self-driving cars?**

- a. Automakers have already eliminated cybersecurity risks in self-driving cars.
- b. Cyberattacks on self-driving cars can cause loss of control and create danger.
- c. Autonomous vehicles are more vulnerable to cyber threats than physical theft.
- d. When a self-driving car is hacked, the risk is limited to privacy violations.

**47. According to the text, which one is NOT a major ethical concern regarding self-driving cars?**

- a. The potential loss of jobs for millions of drivers, leading to economic and social challenges
- b. Determining who should be held accountable if a self-driving car causes an accident
- c. How a self-driving car should decide whom to protect in a life-threatening situation
- d. Whether self-driving technology will be within everyone's reach or reserved for the wealthy

### **TEXT III**

3D printing, also known as additive manufacturing, is transforming the field of engineering by offering new and innovative ways to design, prototype, and produce parts. Unlike traditional manufacturing methods, which involve cutting or molding materials, 3D printing creates objects layer by layer from digital models. This allows for greater precision, flexibility, and customization in production. Engineers in various fields, including mechanical, aerospace, civil, and biomedical engineering, are increasingly using 3D printing to improve their designs and reduce production costs. In mechanical engineering, 3D printing is commonly used for rapid prototyping. Engineers can quickly create physical models of their designs, test them, and make adjustments before committing to mass production. This process significantly reduces the time and costs involved in product development. In aerospace engineering, 3D printing is used to create lightweight and durable parts for aircraft and spacecraft. The ability to print complex geometries that would be difficult or impossible to achieve with traditional manufacturing methods has led to more efficient and reliable components. Civil engineers are also exploring the potential of 3D printing for construction. Some companies are already using 3D printers to print building materials and even entire structures. This innovation could drastically reduce construction time, lower costs, and minimize waste, making the construction process more sustainable. In biomedical engineering, 3D printing is being used to create custom implants, prosthetics, and even tissue. The ability to print personalized medical devices tailored to an individual's anatomy can greatly improve patient comfort and outcomes. However, despite its many benefits, 3D printing also comes with challenges. High-quality 3D printers and materials remain expensive, and the technology is still developing in terms of speed, scalability, and the range of materials that can be used. There are also concerns about intellectual property rights and the potential for counterfeiting. In conclusion, 3D printing is revolutionizing engineering by offering innovative solutions in design, manufacturing, and customization, though overcoming current challenges is essential for its broader adoption.

**48. One advantage of 3D printing is its ability to offer enhanced flexibility and accuracy as it \_\_\_\_\_.**

- a. duplicates conventional techniques like shaping and cutting materials
- b. produces items by adding layers of material based on digital blueprints
- c. works for producing advanced products rather than simple objects
- d. requires fewer resources than traditional manufacturing processes

**49. Which of the following is TRUE regarding 3D printing in engineering?**

- a. Testing and modifying designs is a lengthy process that delays the start of mass production.
- b. It is used to manufacture bulky and fragile parts for both air and space exploration vehicles.
- c. It could erode the long-term goals of sustainability by increasing environmental costs and waste.
- d. It creates intricate designs that traditional methods can't and improves the efficiency of parts.

**50. Which of the following pairs represents challenges associated with 3D printing technology?**

- |                                    |                                   |
|------------------------------------|-----------------------------------|
| I. High cost of equipment          | II. Limited design innovation     |
| III. Uncontrolled material variety | IV. Copyright protection concerns |

- |           |             |           |             |
|-----------|-------------|-----------|-------------|
| a. I & II | b. III & IV | c. I & IV | d. II & III |
|-----------|-------------|-----------|-------------|