ĐỀ THAM KHẢO SỐ 1

I. LISTENING (5.0 points)

- The listening section is in **FOUR** parts. You will hear each part **TWICE**. At the beginning of each part, you will hear a sound.
- There will be a piece of music at the beginning and at the end of the listening section. You will have **TWO minutes** to check your answers at the end of the listening section.
- All the other instructions are included in the recording.

Part 1. For questions 1–5, listen to a radio program in which two people discuss a film they have recently seen, and decide whether the following are mentioned by only one of the speakers, or by both of them. In the corresponding numbered boxes provided,

write

M for the Male speaker;

F for the Female speaker;

B for **Both** of the speakers.

- 1. The film criticizes aspects of American culture.
- 2. The film's plot includes an unusual take on crime.
- **3**. The visual style of the film is sometimes disappointing.
- **4**. The film contains moments of genuine emotional power.
- 5. The director shows enthusiasm for filmmaking.

Your answers:

1.	2.	3.	4.	5.
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Part 2. For questions 6-10, listen to a news report on world's biggest car and match each number (6-10) in Column I with one letter (A-J) in Column II to make a correct statement according to what is stated or implied by the speaker(s).

Write your answers in the corresponding numbered boxes provided.

Column I	Column II
	A. combines elements from military and civilian vehicles.
	B. holds a Guinness World Record for its unique size.
	C. is not designed for use on public roads.
6. The Sin City Hustler	D. was designed to perform large-scale agricultural tasks.
7. The Dubbion SUV	E. can move over 40 tons of material at once.
8. The Big Bud 747	F. uses a 16-cylinder engine to generate immense power.
9. The Cat 994 K	G. is primarily used in construction and mining operations.
10. The giant Hummer	H. is associated with a famous sheikh.
	I. features a 1,000-gallon fuel tank.
	J. was built by a couple with a background in monster truck
	racing.

Your answers:

6. 7.	8.	9.	10.
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Part 3. For questions 11 - 15, listen to two people speaking about their friendship and write the letter A, B, C, or D in the numbered boxes provided to indicate the correct answer to each of the following questions according to what you hear.

- 11. What did one speaker consider to be a major life-changing experience?
- A. Watching a movie while hiding under a blanket.
- B. Reaching the age of fifty.
- C. Having a serious disagreement with a close friend.
- D. Getting married.
- 12. What was the subject of a humorous, slightly sarcastic remark made by one speaker?
- A. The Tate art gallery.
- B. Their shared taste in food.
- C. The idea of starting knitting.
- D. Singing in a choir.
- 13. What opinion did one speaker give about the meaning of a 'quilt of fear'?
- A. It's perfect for relaxing and imagining things.
- B. It's great to use while watching TV to stay warm.
- C. It serves as protection from made-up worries.
- D. It helps your dreams to come true.
- 14. What issue did the speakers not see eye to eye on?
- A. How often they had arguments in the past.
- B. The best place to put the quilt on display.
- C. How many patches the quilt should have.
- D. The ideal age to form strong, lasting friendships.
- 15 What was the main idea they agreed on by the end of the conversation?
- A. Friendships from your teenage years reflect your dreams and ambitions.
- B. It's difficult to find truly meaningful friendships.
- C. The longer a friendship lasts, the stronger it becomes.
- D. It's unwise to combine different groups of friends.

Your answers:

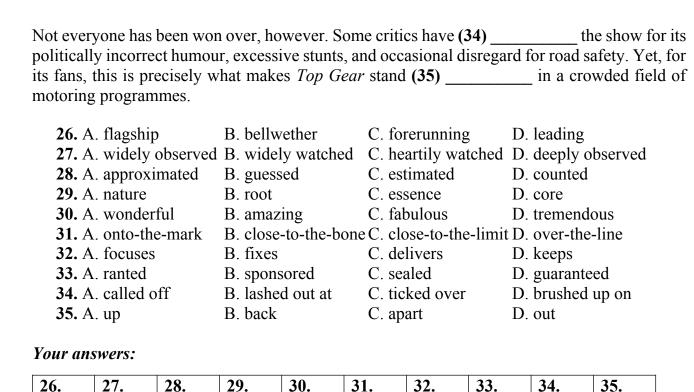
11. 12. 13. 14. 15.

Part 4. For questions 16–25, listen to a talk on the history of Indian curry. Write NO MORE THAN THREE WORDS taken from the recording for each space. Write your answers in the corresponding numbered boxes provided.

How Curry from India Conquered Britain

Curry, the anglicized version of the Tamil word <i>Kari</i> —meaning a spiced sauce—wa	.S
commonly used to refer to any (16) that originated in the Indian subconti	nent.
Although the first (17) of curry appeared in 1598, it wasn't until the m	d-18
century that Britain saw the publication of its first known curry recipe.	
The country's first Indian restaurant, though (18), offered a wide range	of dishes
to curious British diners. Around that time, chicken curry—made using an elderly for	wl—
found its way into the (19) of British cuisine.	

• •	ily on traditional Indian spices, combining them
with meaty stews and a variety of ingredients	, although they were still unfamiliar to
(20)	
	ons of curry began to diverge from the originals.
Mango, for instance, was swapped out for (21), and ready- made spicy blends
were used in (22)	
Curry's popularity truly surged after the secon	
which led to significant migration from the su	
), perfectly suited to the tastes and
budgets of the British public.	
Finally, in 2001, British Foreign Secretary Ro	
masala—an Indian-origin dish—had become	the true British national dish.
Your answers:	
16.	17.
18.	19.
20.	21
22.	23.
24.	25.
Part 1. For questions $26 - 35$, read the passe D) best fits each space. Write the letter A, B,	nge below and decide which answer (A, B, C, or C, or D in the numbered boxes provided.
audience as <i>Top Gear</i> . Blending a heady mix the programme has evolved into a householanguage barriers. While originally intended cultural phenomenon that even non-petro motoring programme first aired in factual television programme in the world. A	e the imagination of such a wide and varied global of adrenaline, wit, and stunning cinematography, old name that transcends national borders and for motoring enthusiasts, it has since become a lheads find hard to resist. The BBC's (26) in 2002. It has become the most (27)
Gear was sold to 214 'territories', gaining a to million.	otal global viewership (28) to be 350



Part 2. For questions 36 - 40, read the passage, then fill in each of the numbered spaces with the correct form of the words given in the box. Write your answers in the numbered boxes provided. There are FOUR words that you do not need to use. The first one, (0), has been done as an example.

generation	bind	modern	extension	operate
oppose	create	climate	nation	equivocate

norms, and create a world that balances tradition with innovation. The task, though daunting, is not impossible—it is a test of resilience, adaptability, and clarity of purpose.

Your answers:

0. pseudo-modern	36.	37.
38.	39.	40.

Part 3. The passage below contains FIVE grammatical mistakes. For questions 41 - 45, UNDERLINE the mistakes and WRITE THEIR CORRECT FORMS in the numbered boxes provided. The first one has been done as an example.

CENTRE OF THE UNIVERSE

Back in the 13th century, the Aztecs, as we call them today, was known as Chichimecas, which translates as 'barbarians'. They were the last of their kind and as legend has them, they left a mythical island called Aztlan in search of a place to settle. Following a long migration period, Lake Texcoco was the chosen spot for settlement, as the Aztecs' guardian god, Huitzilopochtli, sent them a sign: an eagle atop a cactus eating a snake. On their choosing land, the Aztecs reigned for more than 500 years in the region that today is called Mesoamerica, aka the Mexica or Aztec Empire.

The Aztecs were imperial, and in the centuries that they reigned as myth-inspired warriors, they managed to take 400 or more towns, extending their empire beyond the Mexican border and into Central America. Many Aztec towns had temples, markets, and schools. Family and religion were pivotal elements of Aztec society, and brutal rituals such as sacrificing human hearts and blood to keep the sun and, in turn, life itself moving, are gory proof that superstition was also cemented into daily life alongside a staunch belief in myths and legends. Similar to the roots of Christianity, they believed that the Earth was the centre of the universe and over, there were 13 heavens where their gods lived, and below, nine underworlds of which Mictlantecuhtli, god of death, ruled the lowest one.

Although the Aztec empire eventually fell after eight long months of being under siege by the Tlaxcalans (allies to Hernán Cortés and his fellow Spanish conquistadors), the Aztec people survived, their descendants living on today in Mexico. Mexico still upholds the eagle perched on a cactus as it's national emblem and today there are many places in Mexico where traces of the Aztecs remain. These ruins have a powerful effect on how people view history and heritage in the region.

Your answers:

E.g. were	41.	42.	43.	44.	45.
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II.2. READING (5.0 POINTS)

Part 1. For questions 46-55, read the passage and fill in each of the following numbered blanks with ONE suitable word. Write your answers in the corresponding numbered boxes provided.

The Fragility of Truth in the Post-Truth Era

In the so-called post-truth era, where emotions frequently eclipse evidence and
subjective narratives are often afforded more legitimacy than (46) facts, the very
concept of truth has become alarmingly fragile. No longer confined to the (47) of
philosophy or academic debate, truth is now a contested terrain in the (48) sphere,
susceptible to distortion, manipulation, and strategic omission. The democratization of
information (49) digital platforms, (50) ostensibly empowering, has
paradoxically facilitated the proliferation of misinformation on an unprecedented
(51)In such a landscape, the distinction between fact and opinion is routinely
blurred, and the credibility of expertise is (52) undermined by populist rhetoric
and ideological tribalism. The algorithms that govern our online interactions, designed to
maximize engagement rather than accuracy, reinforce pre-existing beliefs and shield users from
dissenting (53), creating intellectual echo chambers that foster certainty without
understanding. As a consequence, critical thinking — once the cornerstone of democratic
society — is at risk of being (54) by reactive partisanship and superficial
consensus. If truth is to be preserved as a meaningful construct, it must be actively defended
through rigorous inquiry, open discourse, and an unwavering (55) to intellectual
humility in the face of complexity.
Vour answers:

Part 2. Read the following passage and do the tasks that follow.

47.

52.

ELECTRORECEPTION

49.

54.

50.

55.

48.

53.

A

46.

51.

To open one's eyes underwater is to confront a hazy, indistinct green murk through which little can be discerned. Auditory signals, likewise, become distorted and barely intelligible. In the absence of sophisticated instrumentation, humans would find themselves utterly disoriented in such abyssal domains. Yet, aquatic creatures appear to navigate them with effortless precision. This is largely attributable to a biological faculty termed *electroreception*—the capacity to detect and respond to electrical stimuli as an integral component of sensory perception. This phenomenon is exclusive to aquatic or semi-aquatic organisms, as water provides an optimal medium for the conduction of electricity.

В

Electroreception manifests in two principal forms. While virtually all animals, humans included, emit electrical impulses generated by neural activity, certain species have evolved the capability—referred to as *passive electroreception*—to perceive and interpret these bioelectric signals from others, thus enabling them to ascertain the location of nearby creatures.

 \mathbf{C}

Some organisms go a step further still. Those endowed with *active electroreception* possess specialized electric organs that emit bespoke electrical discharges on demand. These signals function in diverse contexts, including mating rituals, territorial demarcation, and the detection

of objects within the aquatic environment. Such electroreceptors are sensitive to the differential resistances their fields encounter, allowing the animal to discern whether an entity constitutes prey, a predator, or a neutral presence. Typically, the effective range of active electroreception extends roughly the length of the animal's own body—just sufficient to facilitate either timely evasion or a decisive strike.

D

An especially intriguing application of active electroreception is the so-called *Jamming Avoidance Response* (JAR), observed in certain species classified as weakly electric fish. When two individuals of this type encounter one another while transmitting at identical frequencies, each adjusts its output to prevent overlap, thus avoiding signal interference. This innate frequency modulation predates by millennia the frustrated cries of amateur radio operators admonishing interlopers to vacate their channel—demonstrating nature's own precedent for conflict resolution through spectral differentiation.

E

Electroreception also assumes a pivotal role in defense mechanisms. Rays exemplify this with remarkable subtlety. Embryonic rays, developing within egg casings anchored to the sea floor, perpetually undulate their tails to facilitate oxygen flow through the egg's membrane. Should their electroreceptors detect the faint electric signature of a nearby predator, such as a shark, the embryos instinctively cease movement—thereby halting their own electrical emissions—until the threat subsides. Given the high frequency of marine passersby, these embryos are finely attuned to respond solely to electrical patterns characteristic of predatory respiration, ensuring energy conservation and risk avoidance.

F

The fear of sharks among swimmers, while often exaggerated, is not without some foundation. Humans are inherently ill-equipped in terms of electroreceptive defenses, whereas sharks are paragons of sensory acuity. Their initial detection of prey relies on a prodigiously developed olfactory apparatus, to which fully two-thirds of their cerebral mass is dedicated. As they approach the target, they transition seamlessly to electroreceptive tracking, enabling pinpoint strikes. So refined is this capability that sharks routinely retract their eyes—rendering themselves momentarily blind—to shield them during impact, relying solely on bioelectric cues to strike true.

G

Human victims are typically attacked by sharks inadvertently. Devoid of the capacity to discern edibility through electroreception, sharks often adopt a "sample first" approach—delivering one or two exploratory bites before evaluating the palatability of their catch. Human flesh, being comparatively fibrous and sinewy, proves less appealing than the blubber-laden bodies of seals. Nevertheless, the likelihood of subsequent attacks escalates dramatically once bleeding occurs; the salt-rich human blood amplifies the surrounding electric field, creating a scenario conducive to a feeding frenzy. In regions where human-shark encounters are more prevalent, researchers are investigating synthetic electroreceptive technologies that might confuse or repel sharks, thereby safeguarding swimmers.

Η

Despite considerable advances in behavioral analysis, much remains enigmatic regarding the underlying mechanisms of electroreception. Although scientists have documented its influence

on predation, defense, and interspecies communication, the precise neurobiological pathways by which such electrical data is encoded and decoded continue to elude full comprehension. A further frontier lies in its potential role in navigation. Some hypothesize that marine species exploit interactions between saline water and geomagnetic fields, generating currents that serve as natural compasses—particularly for migratory predators such as sharks.

For questions 56 – 61, decide whether each of the following statements is True (T), False (F) or Not Given (NG). Write T, F, or NG in the corresponding numbered boxes provided.

- **56**. Electroreception is possible for all terrestrial and aquatic animals.
- 57. Active electroreception can help animals both identify threats and attract mates.
- **58**. The Jamming Avoidance Response occurs only when weakly electric fish of different species meet.
- **59**. Shark embryos stop moving inside their eggs whenever any nearby creature passes.
- **60**. Sharks use electroreception to attack with accuracy even when their vision is momentarily impaired.
- **61**. Scientists have confirmed that sharks use electroreception for long-distance migration.

Your answers:

56	6.	57.	48.	59.	60.	61.
		0.0				

For questions 62 – 69, read the summary and fill in each space with NO MORE THAN THREE WORDS from the passage. Write your answers in the corresponding numbered boxes provided.

Electroreception, a (62)	_ phenomenon found solely in aquatic and amphibious						
species, enables organisms to perceiv	we and respond to electrical stimuli. It exists in two forms:						
passive electroreception, whereby animals detect electric signals emitted by others, and active							
electroreception, in which specialize	d organs generate electric discharges for purposes such as						
(63), territorial displa	ays, and object detection. Active electroreceptors can						
distinguish between varying resistan	nces in the water to identify prey or predators. In some						
species like (64), the Jan	nming Avoidance Response mechanism allows individuals						
to alter their signal (65)	to avoid interference. In rays, embryos remain						
motionless inside egg cases when t	they detect electric cues from nearby predators, such as						
sharks. Sharks themselves exhibit ((66), relying heavily on their olfactory organs						
and electroreception to target pr	rey—even while blind. Although observations show						
electroreception influences hunting,	(67), and communication, its neurological						
mechanisms remain unclear. Sc	ientists also hypothesize that interactions between						
(68) and the Earth's mag	gnetic fields may aid sharks in (69) .						

Your answers:

62.	63.
64.	65.
66.	67.
68.	69.

Part 3. In the passage below, six paragraphs have been removed. For questions 70-75, read the passage and choose from paragraphs A-H the one which fits each gap. There is ONE extra paragraph which you do not need to use. Write a letter A-H in the corresponding numbered boxes provided.

THE PSYCHOLOGY OF SOLITUDE IN A HYPERCONNECTED WORLD

In an age defined by constant connectivity, the idea of being alone can seem both foreign and unsettling. Social media platforms, instant messaging, and video calls have made it possible to remain in near-perpetual contact with others. Yet this very abundance of connection often conceals a lack of genuine presence and self-reflection. Solitude, rather than a deficit of interaction, can serve as a necessary counterbalance to the overstimulation of modern life.

70

However, in contemporary culture, solitude is frequently conflated with loneliness. The distinction is crucial: loneliness is the painful awareness of being socially disconnected, whereas solitude is the voluntary act of being alone, often accompanied by a sense of peace or focus. The stigma surrounding solitude often discourages individuals from seeking it, even when their psychological well-being might benefit from it.

71

Children and adolescents, in particular, benefit from learning to be comfortable alone. While social development is undeniably crucial, the ability to entertain oneself and reflect privately cultivates autonomy. Educators have noted that students who can spend time alone often demonstrate greater emotional maturity and resilience. Encouraging healthy solitude from an early age can lay the foundation for balanced adulthood.

72

Modern technology complicates our relationship with solitude. The omnipresence of smartphones creates a constant potential for distraction, making it difficult to fully disengage. Even when physically alone, we are rarely without access to virtual social spaces. This pseudosolitude may prevent the brain from entering a truly reflective or restful state.

73

Solitude also plays a critical role in the formation of identity. When free from external influence, individuals are better able to explore their values, interests, and goals. This inward exploration fosters a more authentic self-concept, unshaped by the demands or expectations of others. It becomes a space where one can recalibrate priorities and make meaningful choices.

74

Some therapeutic models now incorporate solitude as a deliberate tool. Mindfulness retreats, silent meditations, and digital detox programs aim to reintroduce individuals to the benefits of being alone. These interventions offer structured environments in which to confront the discomfort of solitude and, in doing so, often lead to personal breakthroughs. The results suggest a growing recognition of solitude's transformative potential.

75

Ultimately, solitude is not an escape from reality but an encounter with it in its most distilled form. It offers the rare opportunity to hear oneself think, feel without interruption, and exist without performance. In learning to be alone, one learns to be fully present—with oneself and,

paradoxically, with others. In a hyperconnected world, solitude might be not only a luxury but a necessity.

Missing paragraphs:

- A. Historically, solitude was often associated with intellectual and spiritual enrichment. Philosophers, writers, and monks have long sought isolation not as punishment, but as a fertile ground for contemplation. Figures such as Henry David Thoreau and Virginia Woolf found in solitude the clarity and inspiration that fueled their work. It was a space not of emptiness, but of potential.
- B. To cultivate a healthy relationship with solitude, individuals must overcome both internal resistance and societal conditioning. This requires intentionality—setting boundaries, disconnecting from devices, and carving out time for introspection. It may feel counterintuitive in a world that prizes productivity and visibility, but the long-term rewards are considerable. Solitude, when embraced, nurtures psychological resilience and depth.
- C. Moreover, the fear of missing out (FOMO) acts as a psychological deterrent to solitude. The anxiety of being excluded from social happenings drives individuals to stay perpetually connected. Ironically, this fear can result in a diminished sense of presence in any given moment, as attention is fragmented across multiple channels. The very tools meant to connect us can sometimes rob us of depth.
- D. There are, of course, potential dangers associated with prolonged solitude, particularly when it is imposed rather than chosen. Extended isolation, such as that experienced by the elderly or marginalized groups, can lead to depression and cognitive decline. This underscores the importance of distinguishing between healthy solitude and harmful social isolation. Context and agency are the determining factors.
- E. Nevertheless, solitude is not a one-size-fits-all experience. Cultural context plays a significant role in shaping how solitude is perceived and practiced. In individualistic societies, solitude might be valorized as independence, while in collectivist cultures, it may be viewed with suspicion or pity. Understanding the cultural lens through which we interpret solitude helps to dismantle the assumptions we often make about it.
- F. True solitude has become rare but essential. Time alone allows the mind to slow down, reflect, and reset without external noise. It helps individuals develop self-awareness and emotional balance, which are often lost in the rush of online interactions. Far from being loneliness, solitude is a form of mental rest and renewal.
- G. Scientific research increasingly supports the idea that time spent alone can have restorative effects. Studies in cognitive psychology suggest that solitude fosters creativity, self-regulation, and deep thinking. Without the pressures of social performance, the brain is free to wander, process complex emotions, and engage in imaginative thought. In moderation, solitude can function as a cognitive and emotional reset.

Your answers:

	70	F-1	70	5 2	7 4	<i></i>
	·/O.	/	12.	1.7. 5 .	14.	'/ 5 .
	700	, ±•	, 	,	,	70.

Part 4. For questions 76-85, read the following passage and write A, B, C or D in the corresponding numbered boxes provided to indicate the correct answer which fits best according to what is stated or implied in the text.

THE PARADOX OF PROGRESS

- 1. In the canon of human advancement, the notion of progress has been both a beacon and a burden. From the steam engine to the silicon chip, societies have constructed narratives extolling the virtues of forward momentum. Yet, beneath this linear march lies a troubling paradox: the more we accelerate towards the future, the more disconnected we may become from fundamental aspects of our humanity. The rush to innovate has, in many quarters, outpaced our ability to interrogate the moral and psychological implications of our own creations.
- 2. Consider the evolution of communication. Where once the written letter demanded patience and introspection, today's digital dialogues are typified by brevity and immediacy. [A] While technological tools have rendered us more connected than ever in a literal sense, this hyper-connectivity often coincides with a profound sense of alienation. Relationships conducted through the flicker of screens can engender an illusion of intimacy while precluding the vulnerability essential to genuine emotional bonds.
- **3.** The environmental cost of progress, too, has become an unavoidable contradiction. Modern economies, fuelled by consumption, have generated unprecedented levels of affluence alongside mounting ecological degradation. **[B]** The celebration of economic growth frequently omits the growing disconnect between GDP and wellbeing. It is not uncommon for societies to boast of prosperity while grappling with soaring rates of anxiety, depression, and burnout.
- 4. Education systems, once lauded as engines of enlightenment, are now increasingly critiqued as *factories of conformity*. The emphasis on quantifiable achievement, standardized testing, and vocational utility has narrowed the space for curiosity, creativity, and critical thought. [C] In the name of preparing students for the 'real world', we risk depriving them of the tools to imagine alternative ones. The very institutions designed to foster intellectual freedom often end up circumscribing it.
- 5. Even in the realm of medicine, progress presents a double-edged sword. While we can now sequence the human genome and target disease with astonishing precision, our healthcare systems remain plagued by inequality and inaccessibility. Advanced treatments are too often the preserve of the privileged, exposing the fallacy that innovation alone can equalize outcomes. [D] As such, the ethical landscape of modern medicine is fraught with dilemmas that scientific prowess alone cannot resolve.
- **6.** Ultimately, progress devoid of introspection risks becoming self-defeating. The pressing challenge of our era is not to reject innovation, but to recalibrate our relationship with it. We must ask not only what is possible, but what is desirable, and for whom. Without a parallel commitment to justice, empathy, and sustainability, our accomplishments may turn to ash in our hands, monuments not to our greatness, but to our *myopia*.
- **76**. The main argument in paragraph 1 is that _____
- A. human advancement has been mostly positive throughout history.
- B. innovation often causes psychological benefits.
- C. progress may have unintended consequences that are rarely questioned.
- D. moral considerations always precede technological growth.

77. In paragraph 2, the author implies that digital communication A. has eliminated the need for face-to-face interaction. B. has strengthened the quality of our relationships. C. encourages superficial connections rather than deep bonds. D. has improved emotional intelligence in society. 78. What is the main paradox discussed in paragraph 3? A. Wealth creation improves both GDP and mental health. B. Ecological degradation is necessary for economic prosperity. C. Material progress does not always align with human wellbeing. D. Anxiety levels drop as economic performance increases. 79. The phrase "factories of conformity" in paragraph 4 suggests that education
A. prioritises independent thinking above all else.
B. produces students with creative potential.
C. encourages a rigid and uniform approach to learning.
D. embraces diversity and innovation in learning styles.
80. According to paragraph 5, the limitations of medical progress lie mainly in
A. technological underdevelopment. B. unequal access and ethical complications. C. overreliance on traditional remedies. D. widespread public mistrust of medicine. 81. The author's view of innovation can best be described as A. cynical and dismissive. B. balanced but cautious. C. enthusiastic and optimistic. D. hostile and regressive. 82. The word "myopia" in the final paragraph most nearly means A. short-sightedness B. intelligence C. radicalism
D. innovation
83. Which of the following best summarizes the overall message of the passage?
A. Progress is inevitable and always beneficial.
B. True advancement must be guided by ethical reflection and inclusivity.
C. Economic growth should be the central focus of innovation.
D. Educational reform is the key to a sustainable future.
84. The author's primary purpose in writing this passage is to
A. celebrate technological and medical innovation.
B. defend traditional systems against modern changes.
C. highlight the contradictions of progress and advocate for mindful advancement.D. criticise all forms of societal development as harmful.

85. Which of the following square brackets [A], [B], [C], or [D] best indicates where in the passage the sentence "Indeed, the relentless pursuit of productivity often camouflages a quiet erosion of communal life, leisure, and reflective thought." can be inserted?

A. [A]

B. **[B]**

C. [C]

D. **[D]**

Your answers:

76	5.	77.	78.	79.	80.	81.	82.	83.	84.	85.

Part 5. For questions 86-95, read the following passage and choose from the section (A - E). The section may be selected more than once. Write the letter A, B, C, D or E in the corresponding numbered spaces provided.

EPIGENETICS: REWRITING THE BIOLOGICAL RULEBOOK

- **A.** For much of the 20th century, the prevailing view in biology was that genes operated like immutable blueprints: fixed, predictable, and inherited with little room for deviation. DNA was considered the ultimate determinant of an organism's traits, and genetic inheritance was thought to be the principal force driving evolution and development. However, the emergence of epigenetics has profoundly challenged this deterministic view. Epigenetics refers to the study of heritable changes in gene expression that do not involve alterations to the underlying DNA sequence. These changes are often triggered by environmental factors such as diet, stress, or exposure to toxins. As a result, the genome is now seen not as a rigid script, but as a dynamic, responsive system influenced by both internal and external conditions.
- **B.** At the heart of epigenetics lie chemical modifications, such as DNA methylation and histone acetylation, which influence how genes are expressed. These molecular tags can activate or silence genes without altering the genetic code itself. For example, two individuals may share identical DNA but exhibit vastly different characteristics due to divergent epigenetic markers. This phenomenon is especially evident in identical twins, who often develop different susceptibilities to disease despite having the same genome. Such findings suggest that gene expression is far more plastic than previously assumed. Importantly, some epigenetic changes can be passed down to offspring, implying that environmental experiences might have multi-generational consequences.
- C. The implications of epigenetics are particularly significant in the field of medicine. Diseases once thought to be purely genetic, such as certain cancers or neurodegenerative disorders, are now understood to involve epigenetic components. Abnormal patterns of DNA methylation, for instance, have been linked to the activation of oncogenes or the silencing of tumor suppressor genes. Moreover, pharmaceutical interventions targeting epigenetic mechanisms known as epigenetic therapies are being developed to reverse harmful modifications. These treatments offer hope for conditions that were once deemed untreatable by conventional genetic approaches. However, the complexity of the epigenetic landscape means that such therapies require precision and caution.
- **D.** Epigenetics also intersects with fields beyond traditional biology, including psychology, sociology, and even public health. For example, chronic stress or childhood trauma has been

shown to leave lasting epigenetic marks that affect emotional regulation and susceptibility to mental illness. This understanding challenges the notion that mental health is solely a product of individual behavior or genetics. It introduces a biological framework for understanding how social conditions "get under the skin." As such, epigenetics provides a compelling bridge between biology and lived experience, reinforcing the need for holistic approaches to healthcare and social policy.

E. Despite its transformative potential, epigenetics remains a field in its infancy, filled with unanswered questions and methodological challenges. Not all epigenetic changes are permanent, and distinguishing cause from effect remains a complex task. Furthermore, ethical considerations are beginning to surface, particularly concerning parental responsibility and the potential misuse of epigenetic information. As research progresses, it will be crucial to establish frameworks for responsible interpretation and application. Nevertheless, the study of epigenetics has ushered in a new era of biological understanding — one that blurs the lines between nature and nurture, and emphasizes the fluid, responsive nature of life itself.

In which sections are the following mentioned?

- **86**. A description of the potential for a new understanding of the relationship between nature and nurture.
- 87. An explanation of how chemical changes can control whether genes are active.
- 88. A reference to treatments that aim to undo harmful genetic expressions.
- **89**. Mention of how the same genetic material can produce different outcomes.
- 90. An example of how life experiences may affect gene expression over generations.
- 91. A warning that current scientific methods still face limitations in this field.
- 92. Discussion of how epigenetics relates to social and emotional conditions.
- 93. A statement about the need to balance scientific progress with ethical considerations.
- **94**. A suggestion that stress can have long-term biological effects.
- 95. A challenge to the traditional idea that genes alone control how we develop.

Your answers:

8	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.
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III. WRITING (5.0 points)

Part 1. Read the following extract and use your own words to summarise it. Your summary should be between 120 and 150 words.

Digital entrepreneurship refers to launching and managing ventures via digital platforms and information technologies. Unlike traditional entrepreneurship, it encompasses a wide array of actors, from tech innovators to small-scale e-commerce traders, and spans various business domains such as marketing, operations, stakeholder engagement, and product distribution. A defining characteristic is the reliance on digital tools and media to drive entrepreneurial activity.

This model unlocks opportunities for both high-tech innovators—like Tope Awotona, founder of Calendly—and those equipped with basic entrepreneurial skills. Activities may include

customer acquisition through digital channels, data-driven product development, and iterative business model refinement. As such, digital entrepreneurship is both accessible and scalable.

The COVID-19 pandemic significantly accelerated this trend, as digital entrepreneurs demonstrated resilience by adapting swiftly to market disruptions. In China, for instance, retailers turned to Taobao Live to sustain sales through livestreaming when physical shops closed. The surge in demand for digital services—online marketplaces, cashless payments, contactless delivery—has reshaped consumer behavior, with many habits likely to persist post-pandemic. These innovations are expected to fuel long-term economic recovery.

Moreover, digital entrepreneurship broadens employment opportunities through emerging technologies such as AI, AR/VR, and voice search, as well as more accessible channels like ecommerce. Platforms like Amazon, eBay, and Alibaba have dramatically reduced entry barriers, spurring rapid growth in online retail. Global e-commerce spending rose from 10.3% in 2019 to 12.2% in 2021.

E-commerce is particularly transformative in developing regions, where it mitigates information asymmetry and boosts efficiency. In China, over 5% of employment is now tied to e-commerce, with rural entrepreneurs leveraging online platforms for business expansion. Similarly, Vietnam supports ethnic minorities and women in remote areas through training and digital tools that enable them to reach broader markets and professionalize their operations.

To fully harness digital entrepreneurship's potential, targeted investment in digital

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