

SECTION A: LISTENING (50 points)

HƯỚNG DẪN PHẦN THI NGHE HIỂU

- Bài nghe gồm 4 phần; mỗi phần được nghe 2 lần, mỗi lần cách nhau 05 giây; mở đầu và kết thúc mỗi phần nghe có tín hiệu. Thí sinh có 30 giây để đọc câu hỏi ở mỗi phần và 30 giây để kiểm tra phần bài làm của mình sau mỗi phần nghe.
- Hết 4 phần nghe, thí sinh có 02 phút để xem và hoàn chỉnh bài trước khi có tín hiệu kết thúc bài nghe.
- Mọi hướng dẫn cho thí sinh (bằng tiếng Anh) đã có trong bài nghe.

Part 1. You will hear a lecture about the origins of the UNESCO World Heritage. Listen and complete the notes below. Write NO MORE THAN TWO WORDS AND/OR A NUMBER for each answer. Write your answers in corresponding numbered boxes provided. (10 points)

THE ORIGINS OF WORLD HERITAGE PROTECTION

The Establishment of UNESCO

- UNESCO was founded in (1) _____ to secure peace and promote understanding after the world wars.

The Abu Simbel Rescue Mission

- International cooperation saved the ancient temples by (2) _____ the monuments and moving them to higher ground.
- This project proved that certain sites hold (3) _____ for all of humanity.

The Selection Process (1972 Convention)

- For a site to be included in the World Heritage List, it must first be (4) _____ by its home country.
- World Heritage sites are considered (5) _____ evidence of the bond between humans and nature.

(Adapted from <https://www.youtube.com/watch?v=lOzxUVCCSug>)

Your answers:

1.	2.	3.	4.	5.
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Part 2. You will hear a talk about the influence of K-pop on the global fashion industry. For questions 6 - 10, decide whether the following statements are True (T), False (F) or Not Given (NG). Write T, F, or NG in the corresponding numbered boxes provided. (10 points)

6. Blackpink's official YouTube channel has surpassed other musical performers in terms of global subscriber numbers.
7. The marketing campaign featuring Billie Tsuki was specifically designed to help brands appeal to a significantly older generation of consumers.
8. Fashion publications have shown a decreasing interest in featuring K-pop idols in their recent issues.
9. The global success of the Hallyu wave has been largely driven by the leading position of K-pop within the movement.

10. Most fans prefer to buy K-pop fashion items through official brand websites rather than at concert venues.

(Adapted from <https://www.youtube.com/watch?v=9J2Yjbl-E0o>)

Your answers:

6.	7.	8.	9.	10.
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Part 3. You will hear an interview with a woman who travelled the world in an unusual way. For questions 11 - 15, choose the correct answer A, B, C or D. Write your answers in corresponding numbered boxes provided. (10 points)

11. When asked about what was behind her unique journey, Josie reveals that she
- A. thinks travel should serve a purpose. B. defines herself as a free spirit.
C. measures her life in challenges. D. wanted to test her self-discipline.
12. What unexpected point is made about how mobile phones affect our holidays?
- A. The ways they enhance the experience.
B. How rarely people actually consult them.
C. Why people rely on them so much.
D. The willpower required to leave them at home.
13. Josie observed that her trip brought opportunities for
- A. increasing self-awareness. B. spontaneous interactions.
C. reflecting on life. D. understanding distraction.
14. What aspect of her personality was she grateful for?
- A. Her ambitious nature. B. Her sense of creativity.
C. Her ability to bond with others. D. Her passion for culture.
15. At the end of the interview Josie implies that mobile phones have a distinct advantage in
- A. maintaining relationships. B. filling waiting time.
C. recording experiences. D. keeping us company.

(Adapted from "Listening C2 – Six more practice tests for the Cambridge C2 Proficiency")

Your answers:

11.	12.	13.	14.	15.
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Part 4. You will hear a talk about the science behind digital detox. For questions 16 - 25, listen and complete the summary below. Write NO MORE THAN THREE WORDS for each gap. Write your answers in corresponding numbered boxes provided. (20 points)

DIGITAL DETOX – THE SCIENCE OF UNPLUGGING FROM SOCIAL MEDIA

A digital detox is frequently perceived as a complete (16) _____ aimed at resetting the brain. From a scientific perspective, constant connectivity is harmful, such as when late-night device use keeps the (17) _____ active.

The anxiety over missing notifications also triggers a rise in (18) _____. This biological response causes a spike in stress levels, effectively training the brain to be anxious. Furthermore, frequent task switching leaves the brain in a state of (19) _____, reducing focus, productivity and the depth of thinking.

The loneliness paradox highlights how social media, although designed to connect people, often encourages comparison. When users spend too much time looking at (20) _____, they may feel their own lives are lacking, leading to self-criticism.

However, stopping these habits too abruptly is usually ineffective because it induces (21) _____, including negative emotional responses and a strong rebound effect. To achieve a sustainable system change, experts advocate for the practice of (22) _____.

To support this approach, several practical strategies are recommended. One involves introducing deliberate barriers to reduce impulsive device use, known as the (23) _____. Another focuses on replacing digital habits with meaningful offline activities that lead to (24) _____ - a sense of purpose and growth. Finally, users are encouraged to manage their communications by allocating specific time slots rather than responding instantly, a technique referred to as (25) _____.

(Adapted from <https://www.youtube.com/watch?v=jnMsS5vR354&t=90s>)

Your answers:

16.	21.
17.	22.
18.	23.
19.	24.
20.	25.

SECTION B: LEXICO - GRAMMAR (40 points)

Part 1. For questions 26-45, choose the best option A, B, C, or D to complete the following sentences. Write your answers in the corresponding numbered boxes provided. (20 points)

26. Sportswashing is when sport is used to _____ attention from social or environmental problems.

- A. divert B. attract C. dissipate D. divulge

27. Our best intentions are sometimes _____ by our natural tendency to selfishness.

- A. reverted B. inverted C. subverted D. averted

28. Slowly, along coast, a _____ of smaller boutique hotels have started to pop up, fueling a tourism boom.

- A. lingering B. hammering C. smattering D. stifling

29. _____, Dobson went on chatting.

- A. There was no motivation for studying B. Without having a motivation for studying
C. There being no cause for studying D. Being no motivation for studying

30. I can't stand being around Marcus ever since his massive success. He just can't stop _____.

- A. feathering his own nest B. blowing his own trumpet
C. giving people the hard sell D. playing truant

31. The company has already wasted a(n) _____ amount of money trying to fix the problem.

- A. inordinate B. coordinate C. subordinate D. proportionate

32. Special needs education is expensive because class sizes need to be small or _____.

- A. one-by-one B. one-with-one C. one-to-one D. one-over-one

33. If the student had been less _____, he would not have been expelled from his grade school.

- A. indefatigable B. perseverant C. indigent D. refractory

34. _____, they wisely prepared alternatives in case the discussions faltered.

- A. However was cautiously optimistic the team
B. Though cautiously optimistic was the team
C. No matter how cautiously optimistic the team is
D. Cautiously optimistic as the team was

35. During the public forum, the activist launched into a(n) _____ against environmental pollution caused by unchecked industrial growth.
 A. diatribe B. encomium C. harangue D. manifesto
36. Sofia looked at the dark figure approaching, her heart racing in _____ terror.
 A. undiluted B. unfettered C. unvarnished D. unblemished
37. Emma sat quietly by the window in a _____, with her mind wandering through memories of childhood summers.
 A. double whammy B. right pickle C. brown study D. tight corner
38. The young athlete _____. He was eager to prove himself in the championship match.
 A. punched above his weight B. was pissing in the wind
 C. hit the ball out of the park D. was straining at the leash
39. The tour guide was _____ pleased to share stories about Vietnam's rich history with the curious visitors.
 A. only so much B. that all much C. only too D. much too much
40. Photographs from the famine-stricken region revealed children with _____ bellies, a tragic symptom of severe malnutrition.
 A. distended B. distilled C. disemboweled D. distempered
41. Isabella kept posting happy selfies online, but it was really to hide her stress behind a _____ of smiles.
 A. shadowbox B. security blanket C. smokescreen D. false modesty
42. _____ around stones that are sunwarmed, even the smallest of stones creates tiny currents of warm air.
 A. The cool air B. That the air cools C. If the air is cool D. The cooler the air
43. Thomas's mother was always _____ to tidy his room and finish his homework.
 A. up against B. away with C. up with D. on at
44. Just when the team thought the deadline couldn't get tighter, the client requested a complete redesign, which was another turn of the _____ in an already stressful project.
 A. bolt B. screw C. pin D. nail
45. _____, the judge finally adjourned the court for a fifteen-minute recess.
 A. All necessary testimonies heard B. He heard all necessary testimonies
 C. With all necessary testimonies were heard D. All necessary testimonies having heard

Your answers:

26.	27.	28.	29.	30.	31.	32.	33.	34.	35.
36.	37.	38.	39.	40.	41.	42.	43.	44.	45.

Part 2. For questions 46-55, fill each gap with the correct form of the word in brackets. Write your answers in the corresponding numbered boxes provided. (10 points)

46. Digital downloads are now a major _____ to cinemagoing. (ATTRACT)
47. She looked _____ pretty, and the front of her dress was a wonderful work of art. (SUM)
48. Many celebrities, in an attempt to attract publicity, _____ their contributions to charity programs. (GRAND)
49. One of the cars involved in the accident was complete _____. (WRITE)
50. Novels about mothers and the conflicts with their offspring are often _____ sentimental. (TIRED)

51. There is little hope that Ryan's behavior will ever improve. It will probably remain so _____ till he grows up. **(CORRECT)**
52. Such a _____ might cause injury to the business goodwill of the corporation. **(FAME)**
53. It was a _____ of the wages-prices spiral and the futile chase after higher incomes. **(TASTE)**
54. Tendentious jokes are a way of _____ the barriers against the direct expression of obscenity and aggression that civilization has set up. **(PASS)**
55. Warned by a(n) _____ of catastrophe, they turned back at the last minute from boarding a plane that was shortly to crash. **(SENTIENT)**

Your answers:

46.	51.
47.	52.
48.	53.
49.	54.
50.	55.

Part 3. The passage below contains FIVE grammatical mistakes. For questions 56-60, IDENTIFY the mistakes and WRITE THEIR CORRECT FORMS in the numbered boxes provided. The first one (0) has been done as an example. (10 points)

Line	
1	Formed more than 415 million years ago- before the extinction of the dinosaurs - the
2	rocky cliffs of the Niagara Escarpment are a product of an ancient lake (0) <u>stretched</u> from
3	what is now Wisconsin to New York state. While Niagara Falls is easily the most famous
4	geological feature along the escarpment's many steep rock faces and promontories, to many
5	avid hikers, the touristy natural wonder is merely the starting point for a 560-mile (900-
6	kilometre) trek through southern Ontario, from the Canada-U.S. border to the rugged Bruce
7	Peninsula, which juts out into Lake Huron. It sneaks around the edges of some of the most
8	densely populated regions of Canada before heading north onto coniferous forests,
9	Carolinian forests, meadows, and wetlands. The trail sometimes cuts through cute rural
10	towns; the hike along the Bruce Trail is an expedition that can include major art museums
11	and artisanal ice cream, as well as intimate encounters of nature. Niagara Falls might be on
12	postcards, and the trail offers an estimated 500 more waterfalls along the way. At points, the
13	escarpment ridge reaches height of more than 1,000 feet (335 metres).

Your answers:

No.	Line	Mistakes	Correction
0.	2	<i>stretched</i>	<i>stretching</i>
56			
57			
58			
59			
60			

SECTION C: READING (60 points)

Part 1. For questions 61-70, read the following passage and decide which option (A, B, C, or D) best fits each gap. Write your answers in corresponding numbered boxes provided. (10 points)

(Kind of) on the scent of cancer

Dogs can boast a range of impressive skills in their portfolio, from leading the blind to carrying out mountain rescues to (61) _____ those with contraband goods at border control posts. Unquestionably, they have extremely (62) _____ senses compared to us humans and, recently, scientists have been investigating the precise (63) _____ of their talents in relation specifically to their sense of smell. In short, they wanted to find out if man's best friend could (64) _____ out cancer.

Indeed, this notion has been around for a while, (65) _____ on the internet for the most part, where anecdotal evidence abounds in the form of countless stories of family dogs persistently smelling certain areas of their owner's body, areas later shown to be cancerous. However, whilst the canine sense of smell is unquestionably (66) _____ thus far at least, there appears to be little scientific (67) _____ for a canine cancer screening program.

The problem is that whilst studies have shown that dogs are right about cancer more often than could be explained by pure chance, their (68) _____ rates are not high enough to make them reliable for screening purposes. Besides, there already exist numerous cancer tests that are far more accurate and effective for this purpose.

Therefore, sadly, whilst man's best friend undoubtedly has some very impressive tricks in his (69) _____, he will not be turning up in cancer units any time soon other than to comfort his loved ones in their time of distress. This writer, for one, though, thinks that purpose is sufficiently (70) _____ in and of itself.

- | | | | |
|-----------------------|------------------|------------------|-----------------|
| 61. A. recommending | B. condescending | C. comprehending | D. apprehending |
| 62. A. broadened | B. lengthened | C. aggravated | D. heightened |
| 63. A. length | B. extent | C. coverage | D. dimension |
| 64. A. sense | B. smell | C. sniff | D. scent |
| 65. A. perpetuated | B. commemorated | C. conserved | D. reserved |
| 66. A. astounding | B. resounding | C. compounding | D. abounding |
| 67. A. motive | B. basis | C. footing | D. concept |
| 68. A. identification | B. recognition | C. detection | D. diagnosis |
| 69. A. repertoire | B. inventory | C. storage | D. provision |
| 70. A. convenient | B. accidental | C. temporary | D. meritorious |

(Adapted from *Ahead with CPE*)

Your answers:

61.	62.	63.	64.	65.
66.	67.	68.	69.	70.

Part 2. For questions 71-80, fill each of the blanks with ONE suitable word. Write your answers in the corresponding numbered boxes provided. (10 points)

CRAFTY PACKAGING

During what could be described as a typical 30-minute supermarket shopping trip, thousands of products will vie for your attention. Ultimately, many will make you believe they are worth picking off the shelves. How, you may ask, is this brought (71) _____? The answer is by packaging – the silent but persuasive salesman.

Louis Cheskin, (72) _____ research into the psychology of marketing began in the 1930s, was a pioneering specialist in the field. He placed identical products in two different packages, one unblazoned with circles, the (73) _____ with triangles. He then asked people which products they preferred, and why. Amazingly, (74) _____ fewer than 80 per cent chose the products in the box with the circles. They believed the content would be of higher quality.

“After 1,000 interviews, I had to accept the fact that the (75) _____ of consumers transferred the sensation from the container to its contents.’ Cheskin admitted later. And there was (76) _____ surprise: even after trying out these identical products, people overwhelmingly preferred (77) _____ in the package with the circles. Cheskin also found, for instance, that the look of a packet has an enormous impact on the biscuit taste. Cheskin called this phenomenon ‘sensation transference’. It became the foundation not (78) _____ of his career as a consultant to companies like Procter & Gamble, but of much of the research done since then.

(79) _____ increasing consumer sophistication, Cheskin’s original concept still works. One recent experiment involved an underarm deodorant posted in packaging of three different colour schemes to a test group. The group was told that three different formulations were (80) _____ consideration, and was asked to judge them.

(Adapted from *Proficiency – Masterclass - Exam Practice Workbook*)

Your answers:

71.	72.	73.	74.	75.
76.	77.	78.	79.	80.

Part 3. For questions 81-90, read the following passage and circle the best answer to each of the following questions. Write your answers in corresponding numbered boxes provided provided. (15 points)

Deciphering the Grammar of Mind, Music and Maths

Imagine a locked room in which a person sits alone staring into space. There is nothing to look at. Most of the world is stripped away. Except for sounds.

But these sounds resemble nothing heard before. They lack all similarity to experience and any reference to surroundings. Now imagine that those sounds – heard for the first time – are the sounds of a Beethoven symphony. What would that disembodied ear and mind make of them? How much would be understood?

In recent decades such a situation would have been considered artificial, abstract and irrelevant. What kind of musical understanding can grow out of this kind of isolation, lacking the expectations provided by the knowledge of a style and lacking some sense of historical and political context? To understand music, we have been taught, that room has to be unlocked, the windows open and the world fully engaged.

But now the emphasis may be changing. The appeal of a more abstract way of thinking about music may be growing. There is a search for timeless laws and principles; it may be that something can be learned from the listener in the locked room.

A new field, for example, sometimes called biomusicology, is preoccupied with how music affects the brain. What regions of the brain respond to changes in harmony or melody? Is there a single region that makes sense of music? Is there a difference between the way neurons react to frequency differences in speech (intonation) and frequency differences in pitch (melody)? In such research the **contingencies** of culture and history are often stripped away. The foundations of musical perception are sought, as are the biological laws that make music a human universal.

This change in emphasis may also be contributing to a renewed interest in the relationship between music and mathematics. For all of music's deep connections to human experience and social life, music is also similar to mathematics in important respects, as ancient philosophical and musical texts insist.

Harmony and counterpoint, after all, are sonic reflections of ratio and number. Musical languages seem to possess their own premises and laws. And a coherent and elegantly phrased composition can display the beauty and inevitability of a mathematical proof. Mathematicians and musicians have long had reciprocal interests. For a time, though, such musical idealism became something of an eccentricity.

But more recently seminars in music and mathematics have been **proliferating** at universities. Last autumn Oxford University Press published an anthology, 'Music and Mathematics: From Pythagoras to Fractals'.

What sort of picture of musical understanding is taking shape with this renewed interest? Much of the brain research is teasingly inconclusive. Every effort to examine the effects of single musical variables – pitch, metre, harmony – inadvertently shows just how much more music is than the sum of its parts. **(I)** Despite attempts to identify a particular musical region of the brain, for example, Dr Tramo, director of the Institute for Music and Brain Science at Harvard University, has shown that many regions are active when music is heard: even motor areas of the brain can become active though the body might be at rest.

(II) The Russian composer Vissarion Shelabin continued to write music for a decade after a stroke in 1953 damaged his speech and language understanding. In one classic study, brain-damaged patients could identify instruments and wrong notes but could not recognize melodies. Some acoustic phenomena – say variations in pitch – are interpreted differently when heard in music and in speech. A recent paper on the tone-deaf by researchers who included Aniruddh D. Patel at the Neurosciences Institute in San Diego shows that while such individuals may have no trouble discriminating intonations in speech, they are stymied by sliding musical imitations of those intonations.

(III) Sonic events may be experienced differently when they become part of music. This is where that locked room becomes so suggestive. We have all been in the position of that abstract listener, particularly when hearing music of an alien culture for the first time that can at first seem like little more than random sounds.

(IV) But music has a power unique among forms of human communication: it can teach itself. Gradually, over repeated hearings, without the use of a dictionary or any reference to the world outside, music shows how it is to be understood. The listener begins to hear patterns, repeated motifs and changes in metre and realizes that sounds have punctuation, that phrases are being manipulated, transformed and recombined.

Nothing else is quite like this self-contained, self-teaching world. Music may be the ultimate self-revealing code; it can be comprehended in a locked room. This is one reason that connections with mathematics are so profound. Though maths requires reference to the world, it too proceeds by noting similarities and variations in patterns, in contemplating the structure of abstract systems. Mathematics is done the way music is understood.

(Adapted from *Key on Exam Essential Proficiency- Practice Test 5*)

81. Why does the writer mention the Beethoven symphony in the second paragraph?

- A. to illustrate that certain kinds of music do not make sense when heard in isolation
- B. to emphasize the difference between a well-known piece of music and music that has never been heard before
- C. to demonstrate that music needs to be related to the outside world in order to be appreciated

D. to speculate what it would sound like to a person with no previous experience of this kind of music

82. What preconception about musical thinking is now under question?

- A. that music has to be heard in a suitable environment in order to be understood
- B. that an understanding of music depends on the listener's cultural conditioning
- C. that people lack the historical and cultural background to make sense of music
- D. that our knowledge of music is essentially abstract and artificial

83. Biomusicology _____.

- A. is the study of how the brain understands and reacts to music
- B. examines the relationship between language and music
- C. is the study of how neurons react to language and music
- D. examines which regions of the brain respond to changes in intonation

84. The word '**contingencies**' in paragraph 5 is CLOSEST in meaning to _____.

- A. the conditions of being dependent on chance
- B. the conditions of being independent on chance
- C. the state of continuing to exist or function
- D. the fact of not stopping or not changing

85. According to the writer, the patterns in a musical composition _____.

- A. illustrate the connection between philosophy and mathematics
- B. can only be understood in a mathematical context
- C. can be compared to the patterns studied in mathematics
- D. no longer express the range of human experience

86. The word '**proliferating**' in paragraph 8 is CLOSEST in meaning to _____.

- A. spreading an idea
- B. making a lot of money in an unfair way
- C. increasing in number very quickly
- D. decreasing in number rapidly

87. Research indicates _____.

- A. that the relationship between music and the mind is unexpectedly complex
- B. that several areas of the brain respond exclusively to music
- C. that when the listener is in motion, certain areas of the brain are activated
- D. that pitch, metre and harmony stimulate all parts of the brain

88. Where does the following sentence best fit?

The relationship between music and language is also complex.

- A. [I]
- B. [II]
- C. [III]
- D. [IV]

89. Studies have also shown that some people with brain damage _____.

- A. can tell the difference between notes and intonations in speech
- B. are unable to distinguish or identify specific tunes
- C. are unable to recognize notes played on certain instruments
- D. fail to notice when a musician strikes a wrong note

90. In the last paragraph, the writer suggests that _____.

- A. music can only be successfully interpreted in a locked room
- B. ultimately music can be appreciated in any context
- C. we understand music in the same way that we approach mathematics
- D. the brain responds to music in the same way it responds to language

Your answers:

81.	82.	83.	84.	85.
86.	87.	88.	89.	90.

Part 4. For questions 91-100, read the passage and complete the tasks that follow. Write your answers in the corresponding numbered boxes provided. (15 points)

Life code: unlocked!

A. On an airport shuttle bus to the Kavli Institute for Theoretical Physics in Santa Barbara, Calif, Chris Wiggins took a colleague's advice and opened a Microsoft Excel spreadsheet. It had nothing to do with the talk on biopolymer physics he was invited to give. Rather the columns and rows of numbers that stared back at him referred to the genetic activity of budding yeast. Specifically, the numbers represented the amount of messenger RNA (MRNA) expressed by all 6,200 genes of the yeast over the course of its reproductive cycle. "It was the first time I ever saw anything like this," Wiggins recalls of that spring day in 2002. "How to make sense of all this data?"

B. Instead of shirking from this question, the 36-year-old applied mathematician and physicist at Columbia University embraced it-and now six years later he thinks he has an answer. By foraying into fields outside his own, Wiggins has drudged up tools from a branch of artificial intelligence called machine learning to model the collective protein-making activity of genes from real-world biological data. Engineers originally designed these tools in the late 1950s to predict output from input. Wiggins and his colleagues have now brought machine learning to the natural sciences and tweaked it so that it can also tell a story-one not only about input and output but also about what happens inside a model of gene regulation, the black box in between.

C. The impetus for this work began in the late 1990s, when high-throughput techniques generated more mRNA expression profiles and DNA sequences than ever before, "opening up a completely different way of thinking about biological phenomena," Wiggins says. Key among these techniques were DNA microarrays, chips that provide a panoramic view of the activity of genes and their expression levels in any cell type, simultaneously and under myriad conditions. As noisy and incomplete as the data were, biologists could now query which genes turn on or off in different cells and determine the collection of proteins that give rise to a cell's characteristic features, healthy or diseased.

D. Yet predicting such gene activity requires uncovering the fundamental rules that govern it. "Over time, these rules have been locked in by cells," says theoretical physicist Harmen Bussemaker, now an associate professor of biology at Columbia. "Evolution has kept the good stuff." To find these rules, scientists needed statistics to infer the interaction between genes and the proteins that regulate them and to then mathematically describe this network's underlying structure-the dynamic pattern of gene and protein activity over time. But physicists who did not work with particles (or planets, for that matter) viewed statistics as nothing short of an anathema. "If your experiment requires statistics," British physicist Ernest Rutherford once said, "you ought to have done a better experiment."

E. But in working with microarrays, "the experiment has been done without you," Wiggins explains. "And biology doesn't hand you a model to make sense of the data." Even more challenging, the building blocks that makeup DNA, RNA, and proteins are assembled in myriad ways; moreover, subtly different rules of interaction govern their activity, making it difficult, if not impossible, to reduce their patterns of interaction to fundamental laws. Some genes and proteins are not even known. "You are trying to find something compelling about the natural world in a context where you don't know very much," says William Bialek, a biophysicist at Princeton University. "You're forced to be agnostic." Wiggins believes that many machine-learning algorithms perform well under precisely these conditions.

When working with so many unknown variables, “machine learning lets the data decide what’s worth looking at,” he says.

F. At the Kavli Institute, Wiggins began building a model of a gene regulatory network in a yeast-the set of rules by which genes selectively orchestrate how vigorously DNA is transcribed into mRNA. As he worked with different algorithms, he started to attend discussions on gene regulation led by Christina Leslie, who ran the computational biology group at Columbia at the time. Leslie suggested using a specific machine-learning tool called a classifier. Say the algorithm must discriminate between pictures that have bicycles in them and pictures that do not. A classifier sifts through labeled examples and measures everything it can about them, gradually learning the decision rules that govern the grouping. From these rules, the algorithm generates a model that can determine whether or not new pictures have bikes in them. In gene regulatory networks, the learning task becomes the problem of predicting whether genes increase or decrease their protein-making activity.

G. The algorithm that Wiggins and Leslie began building in the fall of 2002 was trained on the DNA sequences and mRNA levels of regulators expressed during a range of conditions in yeast-when the yeast was cold, hot, starved, and so on. Specifically, this algorithm-MEDUSA (for motif element discrimination using sequence agglomeration) -scans every possible pairing between a set of DNA promoter sequences, called motifs, and regulators. Then, much like a child might match a list of words with their definitions by drawing a line between the two, MEDUSA finds the pairing that best improves the fit between the model and the data it tries to emulate. (Wiggins refers to these pairings as edges.) Each time MEDUSA finds a pairing, it updates the model by adding a new rule to guide its search for the next pairing. It then determines the strength of each pairing by how well the rule improves the existing model. The hierarchy of numbers enables Wiggins and his colleagues to determine which pairings are more important than others and how they can collectively influence the activity of each of the yeast’s 6,200 genes. By adding one pairing at a time, MEDUSA can predict which genes ratchet up their RNA production or clamp that production down, as well as reveal the collective mechanisms that orchestrate an organism’s transcriptional logic.

(Adapted from <https://ieltsfever.org/academic-ielts-reading-test-96-with-answers/>)

Questions 91-96

The reading passage has seven paragraphs, A-G. Choose the correct heading for paragraphs A-G from the list below. Write the correct number, i-x, in boxes 91-96.

List of headings	Your Answer
(i) The search for the better-fit matching between the model and the gained figures to foresee the activities of the genes	Paragraph A iii
(ii) The definition of MEDUSA	91. Paragraph B _____
(iii) A flashback of commencement for a far-reaching breakthrough	92. Paragraph C _____
(iv) A drawing of the gene map	93. Paragraph D _____
(v) An algorithm used to construct a specific model to discern the appearance of something new by the joint effort of Wiggins and another scientist	94. Paragraph E _____
(vi) An introduction of a background tracing back to the availability of mature techniques for detailed research on genes	95. Paragraph F _____
(vii) A way out to face the challenge confronting the scientist on the deciding of researchable data.	96. Paragraph G _____
(viii) A failure to find out some specific genes controlling the production of certain proteins	

(ix) The use of a means from another domain for reference	
(x) A tough hurdle on the way to find the law governing the activities of the genes	

Questions 97-100. Complete the following summary of the paragraphs of Reading Passage, using NO MORE THAN THREE WORDS from the Reading Passage for each answer.

Wiggins states that the astoundingly rapid development of techniques concerning the components of genes aroused the researchers to look at (97) _____ from a totally new way. (98) _____ is the heart and soul of these techniques and no matter what the (99) _____ were, at the same time they can offer a whole picture of the genes' activities as well as (100) _____ in all types of cells. With these techniques, scientists could locate the exact gene which was on or off to manipulate the production of the proteins.

Your answers:

91.	92.	93.	94.	95.
96.	97.	98.	99.	100.

Part 5. You are going to read a magazine article featuring four companies, labelled A–D. For questions 101–110, select the section that best matches the information given. You may choose any section more than once. (10 points)

SERVICE EXCELLENCE AWARD

Which company gives the best level of service to its clients? From several hundred nominees for this year's award, the judges have elected a short-list of four. We now publish the written nominations. Which one do you think the judges will choose?

A. THE CONSTRUCTION COMPANY

When the management of this company decided that its pokey London offices were no longer fit for a company at the forefront of workplace construction, the obvious solution was to relocate.

When staff were deliberated, however, the overwhelming wish was to stay put. The company elected to refurbish its existing premises, exactly the type of service it usually offers to its own clients. The building was gutted and a 21st century workspace installed. The episode encapsulates the obvious strengths of the company's business - listening carefully to clients, deploying the right skills and delivering the results.

Morgan Lovell has dearly defined its market niche - fast-growing companies that occupy buildings of up to 10,000 square metres - and the services it wants to provide. Alongside its established strengths in workplace consultancy and construction, it is seeking to offer follow-up maintenance and facilities management, providing a one-stop shop for a company's workplace requirements.

It is pro-active in its selection of clients, grading each prospective customer according to a number of criteria which are designed to identify those which are most likely to want to enter into a long-term relationship.

Once customers are on board, they are assigned an account manager, who is responsible for developing the relationship. Clients are fully involved during individual projects and, at the end of each, they fill out a customer service questionnaire, in which they grade each of the company's personnel on his or her performance.

B. THE DRAMA SPECIALISTS

This company was formed by two enterprising teachers who were looking for a career change. They wanted something that would utilise their respective areas of expertise - business studies and

drama. The idea was a simple one: to offer drama and role play to companies and other large organisations as a way of dealing with communication problems. When it was first floated, the idea met with the standard response 'nice idea, but impractical, unrealistic', but now, a decade later, the company has grown into a £2 million business, becoming one of the UK's largest employers of actors.

Perhaps the most striking feature of the company is the truly vibrant atmosphere of its headquarters, a converted factory in northern England. Enthusiasm and sheer exuberance seem to infect everybody who works there, and there was equal evidence of satisfied customers, with a small mountain of glowing letters from schools, training councils and private businesses

The company's employees work in small teams that take the client's brief, develop a script, rehearse it and then go out on the road to perform. Typically, work might involve issues such as building confidence and dealing with difficult people. At every performance, feedback forms are collected from the audience, and this is followed by a detailed evaluation of results in conjunction with the client, 'We don't say: "This is what we can do for you, take it or leave it," one of the founders explains. 'We are completely focused on the message the customer wants to communicate.'

C. THE DELIVERY SERVICE

If service excellence is viewed as a journey, then the vehicle way out in front most likely has this company's name emblazoned on its sides. The choice of the express delivery company as a nominee for this year's award, three years after its previous triumph, shows how much further down that road this company has travelled in the interim.

In spite of the efforts of contenders to emulate its success, this company has gone from strength to strength, increasing its revenues by 54% in the past five years, and introducing a string of innovations in the process.

An indication of just how far this company has come is its customer dissatisfaction survey, initially targeted at 8,000 customers. The company already surveys 4,000 customers twice a year on their level of satisfaction, with results broken down by individual depots. The company's director of quality, explains: We go in with the assumption that there will always be some little niggles and hitches, and we want to find out about them,'

Another important innovation from this company is - that they go out and seek employees' suggestions in workout sessions', farther than waiting for them to float to the surface. This way, improvement becomes the responsibility of the many rather than the voluntary contribution of the few. In these workout sessions, employees identify the threats to their business and the possible solutions. These are fed to managers, who must use them to formulate an action plan.

Employees are also made aware of the performance of the company through the publication of league tables, which rank individual depots.

D. THE ZOO

When the new chief executive arrived at this zoo, she found that, although staff were committed to the animals, the human visitors were regarded as 'public enemy number one.'

In fact, the zoo had been in continuous decline for several years. Morale was low, keepers ruled over their individual domains, and a blame culture was in place. She set about transforming this culture, putting customer satisfaction at the centre of its strategy. For instance, staff were encouraged to engage the park's customers in conversation and introduce them to the animals. The results have been dramatic. The number of visitors has shot up, and turnover has quadrupled in the last five years.

One of the challenges that any seasonal business faces is to instill temporary employees with the same values and incentives as the full-time staff. At tire zoo, all employees receive a two-week induction

programme and great emphasis is placed on mentoring, whereby senior staff advise and assist younger colleagues.

With visitors constantly on the move, it is important that employees are empowered to dispose of their needs. There is a 'can-do' Service Excellence Award culture in evidence at the zoo, in which each employee is treated as a 'walking information post' for visitors, and is expected to dispose of any service default on the spot.

The zoo has already upgraded its objective from becoming the best regional attraction to becoming, the best family attraction in the UK. The chief executive has a clear vision for the zoo. 'In the future,' she says, 'the public will simply not accept animals being exploited to make money, and that is why we must develop our environmental contribution. The challenge is to become a leader within the conservation sector.'

(Adapted from *CAE Plus 2 – Kristina*)

Which company	
buoy up competition among its own branches?	101. _____
has a system in place envisaged to give bolstering to less adept employees?	102. _____
suffered initially from a lack of teamwork?	103. _____
is aware that its present form of existence may have to be acclimatized?	104. _____
has proved a lot of people wrong by being well-heeled?	105. _____
is a one-time victor of the award?	106. _____
involved its staff in a major decision?	107. _____
requires employees to cope personally and instantly with problems that arise?	108. _____
is regarded as the leader in its field by rival companies?	109. _____
actively encourages its staff to influence the details of company policy?	110. _____

Your answers:

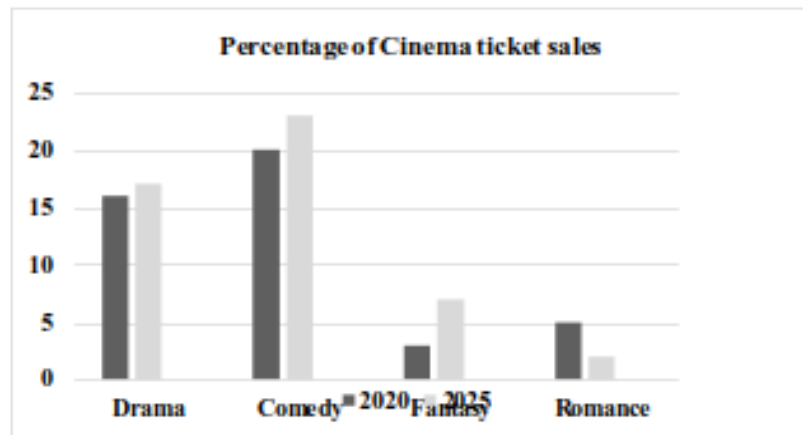
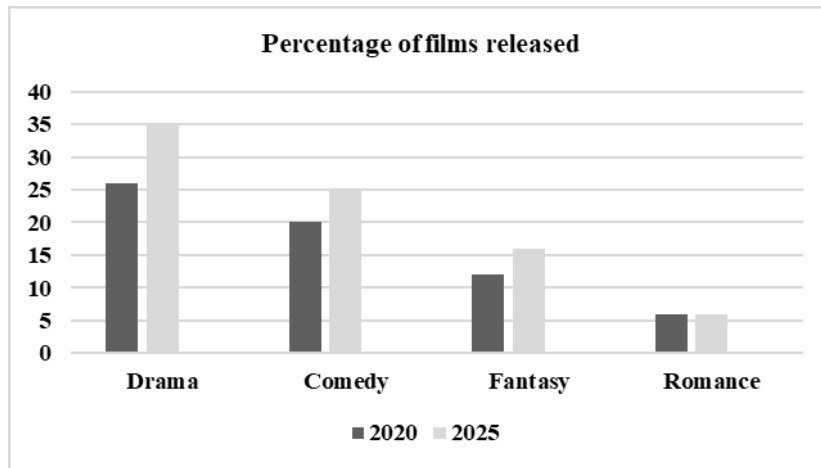
101.	102.	103.	104.	105.
106.	107.	108.	109.	110.

D. WRITING (50 points)

Part 1. (20 points)

The graphs below show the total percentage of films released and the total percentage of ticket sales in 2020 and 2025 in a country.

Summarise the information by selecting and reporting the main features, and make comparisons where relevant. Write at least 150 words.



[illegible]

Part 2. (30 points)

In the era of Artificial Intelligence, the ability to generate information is no longer a human privilege. Therefore, schools should prioritize teaching critical thinking and emotional intelligence over academic knowledge. To what extent do you agree or disagree?

Write an essay of about 250 words to answer the above question. Give reasons and include any relevant examples and explanations to support your answer.

[illegible]

[illegible]

- THE END -