

1.1 Listening

You will hear a lecture about urbanisation. For questions **1-10**, complete the notes which summarise what the speaker says. You will need to write a word or a short phrase in each box. Write **only** the words you hear. **(10 marks)**

The word *city* comes from the _____ **(1)** language.

Without jobs people would not be able to _____ **(2)**.

When cities are overpopulated, it is difficult for them to be _____ **(3)** at the same time.

The _____ **(4)** of the people in the world live in a city.

Some cities grow to such an extent that they swallow up _____ **(5)**.

Conurbations may have a population of more than _____ **(6)**.

One disadvantage of growing cities is that they destroy the _____ **(7)**.

It is believed that *green belts* somewhat _____ **(8)** city growth.

One way of dealing with overcrowded cities is to build other ones on a _____ **(9)**.

Ebenezer's goal was for people to enjoy city life with all the advantages of _____ **(10)**.

Kod sprawdzającego: _____

1.2 Listening

You will hear an expert talking about the phenomena of the tsunami. For questions **11-20**, choose the best answer A, B or C. You will hear the recording twice. **(10 marks)**

- | | | | |
|---|---|-----------|--|
| 11 A tsunami can be caused
A by a sudden disturbance to the sea floor.
B by a series of waves.
C by ships in a harbour. | <table border="1" style="display: inline-table;"><tr><td style="width: 40px; text-align: center;">11</td><td style="width: 60px;"></td></tr></table> | 11 | |
| 11 | | | |
| 12 Effective warning programmes
A can be developed because tsunamis have been extensively studied.
B cannot be developed due to lack of documentation.
C were developed in the ancient times. | <table border="1" style="display: inline-table;"><tr><td style="width: 40px; text-align: center;">12</td><td style="width: 60px;"></td></tr></table> | 12 | |
| 12 | | | |
| 13 Tsunami waves are most often caused by
A meteorites.
B earthquakes.
C volcanic eruptions. | <table border="1" style="display: inline-table;"><tr><td style="width: 40px; text-align: center;">13</td><td style="width: 60px;"></td></tr></table> | 13 | |
| 13 | | | |
| 14 The speed of the tsunami wave
A can be up to 600 miles a day.
B can be up to 6000 miles an hour.
C depends on the depth of the ocean. | <table border="1" style="display: inline-table;"><tr><td style="width: 40px; text-align: center;">14</td><td style="width: 60px;"></td></tr></table> | 14 | |
| 14 | | | |
| 15 Tsunami waves form
A only in the Pacific Ocean.
B in all oceans of the world.
C only in the major oceans. | <table border="1" style="display: inline-table;"><tr><td style="width: 40px; text-align: center;">15</td><td style="width: 60px;"></td></tr></table> | 15 | |
| 15 | | | |
| 16 The first recorded tsunami happened
A in Syria 4000 years ago.
B in 1900 in Japan.
C in the 18 th century in Portugal. | <table border="1" style="display: inline-table;"><tr><td style="width: 40px; text-align: center;">16</td><td style="width: 60px;"></td></tr></table> | 16 | |
| 16 | | | |
| 17 The tsunami caused by the Lisbon earthquake in 1755 killed
A 36,500 people.
B 40 000 people.
C tens of thousands of people. | <table border="1" style="display: inline-table;"><tr><td style="width: 40px; text-align: center;">17</td><td style="width: 60px;"></td></tr></table> | 17 | |
| 17 | | | |
| 18 In the last half of the 20 th century
A there were 10 tsunamis in Indonesia.
B there were no destructive tsunamis.
C there were 3 tsunamis in Indonesia. | <table border="1" style="display: inline-table;"><tr><td style="width: 40px; text-align: center;">18</td><td style="width: 60px;"></td></tr></table> | 18 | |
| 18 | | | |
| 19 The 2004 tsunami
A was one of the most destructive on record.
B was recorded for 7 hours.
C injured 280,000 people. | <table border="1" style="display: inline-table;"><tr><td style="width: 40px; text-align: center;">19</td><td style="width: 60px;"></td></tr></table> | 19 | |
| 19 | | | |
| 20 The Pacific Tsunami Warning Centre
A started operating after 2004.
B started operating in 1948.
C allowed people to prepare for the 2004 tsunami. | <table border="1" style="display: inline-table;"><tr><td style="width: 40px; text-align: center;">20</td><td style="width: 60px;"></td></tr></table> | 20 | |
| 20 | | | |

Kod sprawdzającego: _____

2.1 Reading

You are going to read about the new type of scientists. Five sentences have been **removed** from the article. Choose from the sentences (A-F) the one which fits each gap (21-25). There is one extra sentence which you do not need to use. Write your answers in the boxes provided under the text.

(10 marks)

- A. Not only did these amateurs take part in an amazing study, they also got to keep the equipment.
- B. The information collected in such a project will allow specialists to measure changes in habitat and behaviour.
- C. Despite lasting only two minutes and twenty-seven seconds, it was viewed by millions all over the world.
- D. Although there are a number of cameras already in place across the region, this provides a challenge.
- E. It's the hundreds of thousands of people who come together to assist researchers that make this possible.
- F. Some groups went on a ten-hour drive to reach the perfect location, but all agreed it was worth it.

THE CITIZEN SCIENTIST

There's a new category of scientist around, not a trained professional, but a keen amateur - someone who gives up their time to contribute to a real research project with real goals. Volunteers of all ages are taking part in science investigations on everything from wildlife to weather. Working from their own computer anywhere in the world, they make a significant contribution to academic research without needing formal training or specialist knowledge. And the benefit to the science community is that they get the data for studies that they wouldn't normally be able to collect. **(21)** _____

One way of finding out about a citizen science project is through the platform Zooniverse. Set up in 2009 and with a wide range of subjects on offer, this site aims to get measurable results from the volunteers' work. An example of a citizen science project set up by Zooniverse is Penguin Watch, which involves public counting of different species that have appeared in online photography taken across Antarctica. So how does this help the scientific community and the birds themselves? **(22)** _____ This in turn provides valuable data for the conservation of these much-loved animals and their environment.

Dr Tom Hart from Oxford University is a member of the Penguin Watch team. He says that it's important to check how the penguins are surviving at different locations in Antarctica. Only by comparing several groups of penguins can we understand where environmental changes are taking place and what dangers the birds are facing. **(23)** _____ People are needed to analyse the images and this is why the volunteers are so important. Every time they add data, it increases the scientists' understanding of each species.

Another organisation that has already benefited from citizen scientists is the space agency NASA. During the 2017 solar eclipse in the USA, sixty-eight teams of volunteers set up cameras in remote areas to collect images of the moon covering the sun. **(24)** _____ It was their opportunity to contribute to a project that aims to increase understanding of the solar system itself.

This collaborative effort was set up to get as much data as possible from locations across the country. Trained astrologists were on hand with professional equipment to help the amateur starwatchers get the best results. And the amateurs didn't disappoint. In total, they collected more than 4,000 images, which will provide NASA with more information than the agency had gathered from its previous studies. **(25)** _____ This is because the project director wants to encourage their interest in science far into the future.

21		22		23		24		25	
----	--	----	--	----	--	----	--	----	--

Kod sprawdzającego: _____

2.2 Reading

You are going to read a magazine article about real-life superhumans. For questions **26-35**, choose from the sections of the article (**A-D**). The section may be chosen more than once. Write your answers in the boxes provided. There is an example at the beginning (**0**). **(10 marks)**

Which person's superpower:

- | | | | |
|-----------|---|-----------|--------------------------------|
| 0 | was proved when the person went to remote places? | 0 | <input type="text" value="B"/> |
| 26 | may be shared by other people who don't realise they have it? | 26 | <input type="text"/> |
| 27 | is beneficial for the person's mental and physical health? | 27 | <input type="text"/> |
| 28 | could potentially affect a person's mental development? | 28 | <input type="text"/> |
| 29 | requires theoretically impossibly quick reactions? | 29 | <input type="text"/> |
| 30 | may have inspired the story of a legendary character? | 30 | <input type="text"/> |
| 31 | may help give an insight into curing certain illnesses? | 31 | <input type="text"/> |
| 32 | was eventually discovered by chance? | 32 | <input type="text"/> |
| 33 | is believed by the person to be a question of mind over body? | 33 | <input type="text"/> |
| 34 | could be acquired by whoever is prepared to believe in it? | 34 | <input type="text"/> |
| 35 | cannot be explained by scientists? | 35 | <input type="text"/> |

Kod sprawdzającego: _____

X-MEN: THE REAL-LIFE SUPERHUMANS

Disappointingly for comic-book fans, there is no equivalent to X-Men in the real world. But there are a surprising number of people who - by way of genetic mutation - have acquired abilities that could comfortably be classed as superhuman.

A LIAM HOEKSTRA

Born prematurely, it was feared that Liam Hoekstra would be in poor health as he grew up. If anything, the opposite was true and despite initial problems with his heart and kidneys, it was apparent by the age of only five months that Liam was developing superhuman strength. He was diagnosed with a rare condition characterised by an absence of myostatin. This is a protein which regulates muscle development, a lack of which leads to the kind of physical attributes that athletes can only dream about: 40 percent more muscle than normal, breathtaking strength and speed and almost no body fat. It is possible that the myths about the Greek hero Hercules were based on individuals with this condition. There are no negative side-effects; the only possible drawback was that without adequate body fat, brain growth in childhood could be restricted. Thankfully, Liam seems unaffected. His condition is more than a medical rarity: it could help scientists unlock the secrets of muscle growth and deterioration and lead to new treatments for diseases which cause weakness, such as osteoporosis.

B WIM HOF

One of the original characters in the X-Men was Bobby Drake, otherwise known as Iceman. As far-fetched as it sounds, in the real world there is a real-life Iceman, called Wim Hof. He may not be able to turn everyday objects into ice, as Bobby Drake did, but he holds 20 world records related to resisting the cold, which he says is the result of meditation practices. Among Hof's achievements are standing submerged in an ice bath for one hour and 44 minutes and running a marathon in the Arctic Circle wearing only shorts. Over a period of 20 minutes in the ice bath his temperature and heart rate remained completely normal.

Scientists have confirmed that Hof is indeed able to regulate his body functions; by controlling cell production he gains improved immunity and better cognitive performance. Hof believes the skill is attainable by anyone who can convince themselves they can do it.

C DEAN KARNAZES

Dean Karnazes's muscles have extraordinary properties. Most people suffer intense fatigue and are forced to give up when too much exercising causes lactic acid to build up in their muscles. Not so Karnazes: his body clears the acid with such extraordinary efficiency that he can remain hydrated and functional for remarkably long periods during feats of endurance. His 22-year career includes running 350 miles in 80 hours and 44 minutes without sleep, completing a 135-mile ultra-marathon in Death Valley, California, in temperatures of 49°C and a marathon in each of the USA's 50 states on 50 consecutive days. Unaware of his 'gift' until he took part in a scientific study at the age of 30, he is convinced that there are people like him everywhere who have no idea they have this ability.

D ISAO MACHII

The scientific world is totally confused by Isao Machii, a Japanese practitioner of Iaido, the art of the samurai sword, who is the holder of several world records involving fast sword cuts. For one title he had to cut through a tennis ball travelling at 440 miles per hour. His most impressive feat was when an airgun fired a 5mm plastic pellet at Machii at a speed of 200mph. At this speed it is not likely that the human eye could track an object of this size and unimaginable that human reflexes could respond. Yet he was able to draw his sword and slice it in two when it was in mid-air. A psychologist who observed the experiment said: "He was expecting it before it happened — a unique form of anticipatory awareness, sort of like Spiderman".

3.1 Grammar and Vocabulary

For questions 36-42, read the text below and think of the word which best fits each space. Use only **ONE** word in each space. Write your answers in the answer boxes provided. There is an example at the beginning **(0)**.
(7 marks)

LOW-TECH SOLUTION

Drones have become very popular **(0)**... recent years. They are used officially **(36)**... the military and there are even plans for delivery companies to use **(37)**... to deliver packages. However, one of the main reasons why there are more and more drones in our skies **(38)**... because flying them has become a major hobby for a lot of people.

Yet, there is a problem with this exciting hobby. Sometimes the drones present a real danger by **(39)**... flown too close to airports. **(40)**... issue is that they may fly over restricted, sensitive areas or even during state visits where security is vital.

The Dutch police have come **(41)**... with a clever way of taking out drones that present potential problems - using eagles **(42)**... catch the drones and destroy them. These large birds are trained to identify the drones as prey. Until a cleverer high-tech solution can be found, this natural answer could be very effective.

0	<i>in</i>
---	-----------

36	
----	--

37	
----	--

38	
----	--

39	
----	--

40	
----	--

41	
----	--

42	
----	--

Kod sprawdzającego: _____

3.2 Grammar and Vocabulary

For questions 43-49, read the text below and decide which answer (A, B, C or D) best fits each space. Write your answers in the answer boxes provided. There is an example at the beginning (0). (7 marks)

TRAFFIC IN OUR CITIES

The volume of traffic in (0)... cities in the world today continues to expand. This (43)... to many problems, including serious air pollution, lengthy delays, and the greater risk of accidents. Clearly, something must be done, but it is often difficult to (44)... people to change their habits and leave their cars at home.

One possible (45)... is to make it more expensive for people to use their cars by (46)... charges for parking and introducing tougher fines for anyone who breaks the law.

In addition, drivers could be required to pay for using particular routes at different times of the day. This system, (47)... as 'road pricing', is already being introduced in a number of cities, using a special electronic card (48)... to the windscreen of the car.

Another way of (49)... with the problem is to provide cheap parking on the outskirts of the city, and strictly control the number of vehicles allowed into the centre. Drivers and their passengers then use a special bus service for the final stage of their journey.

- | | | | | |
|-----------|--------------------------|------------------------------|-----------|---|
| 0 | A many
C a few | B few
D number | 0 | A |
| 43 | A causes
C aborts | B leads
D reasons | 43 | |
| 44 | A make
C suggest | B arrange
D persuade | 44 | |
| 45 | A approach
C custom | B manner
D style | 45 | |
| 46 | A enlarging
C growing | B increasing
D developing | 46 | |
| 47 | A named
C called | B seen
D known | 47 | |
| 48 | A fixed
C built | B joined
D placed | 48 | |
| 49 | A doing
C dealing | B handling
D solving | 49 | |

Kod sprawdzającego: _____

3.3 Grammar and Vocabulary

For questions **50-52**, complete the second sentence so that it has a similar meaning to the first sentence using the word given. **Do not change the word given.** You must use **between two and five words**, including the word given. Write **only** the missing words in the answer boxes provided. There is an example at the beginning **(0)**. **(6 marks)**

0 A friendly taxi driver drove us into town.

driven

We a friendly taxi driver.

were driven into town by

50 We started using solar panels in our buildings 20 years ago.

been

We solar panels in our buildings for 20 years.

51 I am sure the results of the survey shocked the government.

must

The government..... with the results of the survey.

52 It was a mistake that we started the experiment without our professor.

wish

I the experiment without our professor.

Kod sprawdzającego: _____

4 Writing

Choose **one** of the tasks and write between **150-200** words.

(20 marks)

1. You are a university student and you want to spend a month doing work experience at an international company. You decide to write a letter to the Recruitment Manager at the company explaining who you are and what you do, why and when you want to do work there and saying how the company would also benefit.

Write your **letter of application**.

2. You have just come back from a holiday you are not satisfied with. Write a letter to the travel agency which organized the holiday and complain about the conditions they provided. This is the list of things you want to write about:
 - accommodation
 - food
 - optional trips
 - staff

Write your **letter of complaint**.

3. It is generally believed that governments should invest more money in new technologies. Which areas of science, in your opinion, require more attention? Discuss:
 - renewable energy sources,
 - medicine,
 - space exploration,
 - other (your own idea).

Write your **essay**.

Task No

..... 10

..... 20

..... 30

..... 40

..... 50

..... 60

..... 70

..... 80

..... 90

..... 100

..... 110

..... 120

..... 130

..... 140

..... 150

..... 160

..... 170

..... 180

..... 190

..... 200

.....

.....

How many words have you written? _____ words

T .../5
C .../5
V .../5
G .../5
S2 .../20

T .../5
C .../5
V .../5
G .../5
S2 .../20