**2019年度英语高三备考资料“科技类”阅读理解22篇（泉州）**

Passage1

Visitors to Henn-na, a restaurant outside Nagasaki, Japan, are greeted by an unusual sight: their food being prepared by a row of humanoid robots. The “head chef”, named Andrew, is using his two long arms; he stirs batter（面糊）in a metal bowl, then pours it onto a hot grill. In a nearby hotel, robots check guests into their rooms and help with their luggage.

CEO Hideo Sawada, who runs the restaurant and the hotel, predicts that 70% of the jobs at Japan’s hotels will be automated（自动化）in the next five years. He said, “Since you can work them 24 hours a day, and they don’t need vacation, eventually it’s more cost-efficient to use the robot.”

This is seemingly worrying. In fact, in America, automation helps the food-service and accommodation sector continue to grow. In the company Panera, because of its new kiosks, an app that allows online ordering, the chain is now processing more orders overall, which means it needs more total workers to meet consumer demand. Starbucks customers who use the chain’s app return more frequently than those who don’t, the company has said, and the greater efficiency that online ordering allows has boosted sales at busy stores during peak hours. Starbucks employed 8% more people in the U.S. in 2016 than it did in 2015, the year it launched the app.

Of course, whether automation is a net benefit for workers in restaurants and hotels, and not just a competitive advantage for one chain over another will depend on whether an improved customer experience makes Americans more likely to dine out and stay at hotels, rather than brown-bagging it or finding an Airbnb to book unique homes.

1. Why does the writer describe the unusual sight in Paragraph 1?
2. To promote robots. B. To introduce the topic.

C. To voice his opinion. D. To show the background.

2. What does the underlined sentence in Paragraph 3 mean?

A. Automation may be a challenge to human jobs.

B. Automation may increase business costs.

C. Workers may fail to focus on their tasks.

D. Many companies may fail to survive.

3. What can we learn from the two cases in Paragraph 3?

A. The two companies are trying to take over the market competitively.

B. Automation could open up more job chances for humans.

C. Starbucks employed more people than Panera did in 2016.

D. Automation helps the shops become famous online.

4. What is the author’s attitude towards the future of automation?

A. Objective. B. Reserved. C. Cautious. D. Doubtful.

答案BABA

Passage2 (南安一中 吕文谦)

 Artificial Intelligence (AI) is making it possible for companies to monitor workers’ behavior in great detail and in real time. Start to slack off (懈怠), and AI could talk to your boss.

One company offering such services is London-based start-up Status Today. Its AI platform relies on a regular supply of employee data, including everything from the files you access to when you use a key card. From this, it builds a picture of how employees normally function and signals any unusual performance. The idea is to spot when someone might become a security risk by doing something different from their usual behavioral patterns. “All of this gives us fingerprint of a user, so if we think the fingerprint doesn’t match, we raise a warning”, says Mircea Dumitrescu, the company’s chief technology officer.

The system also aims to catch employee actions that could accidentally cause a security breach (漏洞), like opening malware (恶意软件). “We’re not monitoring if your computer has a virus. "says Dumitrescu. “We’re monitoring human behaviors. ”

But catching the security breach means monitoring everyone, and the AI can also be used to track employee productivity. “It seems like they are just using the reputation of AI to give an air of lawfulness to old-fashioned workplace surveillance (监视), "says Javier Ruiz Diaz of digital campaigning organization the Open Rights Group. “You have a right to privacy and you shouldn’t be expected to give that up at work. ”

Exactly how companies use the system will be up to them, but it’s hard to shake the picture of an AI constantly looking over employees’ shoulders. “It will bother people, and that could be counterproductive if it affects their behavior, "says Paul Bemal at the University of East Anglia.

Phil Legg at the University of the West of England says it will never catch every security risk. “If people know they’re being monitored, they can change their behavior, "he says.

1. According to the text, AI monitors employees by \_\_\_\_\_\_\_\_.

A. taking pictures of them B. getting access to their data

C. signaling their usual performance D. catching their actions

2. What’s Javier Ruiz Diaz’s attitude towards the system?

A. Approving. B. Uncaring. C. Supportive. D. Negative.

3. What does the underlined word “that"in paragraph 4 refer to?

A. Security breach. B. Employees’ productivity.

C. The right to privacy. D. Workplace surveillance.

4. Phil Legg’s concern about the system suggests that \_\_\_\_\_\_\_\_.

A. it is too risky to be used at work B. it will affect employees’ emotions

C. it may not be so effective as expected D. it will encourage employees’ productivity

答案BDCC

Passage3 (泉州五中 王碧燕)

Claude Monet, Pablo Picasso and Leonardo da Vinci ... the art world has never lacked talent. And now, a new painter is ready to join the list, although this one isn't even human.

Next month, the auction house Christie's Prints and Multiples will make history by offering the first piece of art work created by artificial intelligence (AI) for sale. The painting is a portrait of a man called Edmond De Belamy, and is expected to be sold for up to $10,000.

The work, which features a man with a mysterious look on his face, was created by software developed by the French art group Obvious. Laugero-Lasserre, an art collector, called the work "grotesque and amazing at the same time". This isn't the first example of AI-produced artwork, as AI has already been used to write poems and compose songs. However, many people doubt whether it should be called art at all.

According to Russian writer Leo Tolstroy (1828 -1910), art is about creating emotion (情感). It's "a means of … joining people together in the same feelings," he once said.

So, if the emotion behind art is what makes it, the ability to create and use tools is what makes human beings different from other species. And as a tool itself, the AI technology used to create the portrait is the result of a lot of effort made by several designers. Together, they "fed" the AI a huge collection of paintings from the 14th to the 18th centuries, until it was able to work out how to make similar paintings of its own.

The introduction of AI art could be the beginning of a new artistic movement. However, not everyone is ready to welcome these high-tech artists just yet.

"The human mind is what's behind the AI technology. And the human mind is not a cold, hard fact," said Oscar Schwartz, a professor of AI. "Rather, it is something that's created with our opinions and something that changes over time."

1. Why does the author mention the artists in Paragraph 1?

A. To introduce their works. B. To make an advertisement.

C. To present a piece of news. D. To focus the topic on the AI.

2. What does the underlined would "grotesque" in Paragraph 3 mean?

1. Strange. B. Simple. C. Messy. D. Understandable.

3. What can we learn about the AI-produced artwork according to Paragraph 5?

A. It comes from human works. B. It shows human ability to create.

C. It expresses human feelings effectively. D. It is beyond the imagination of humans.

4. What does Oscar Schwartz think the human mind is compared with the AI ?

A. Limited. B. Decisive. C. Useless. D. Meaningful.

答案DAAB

Passage4 (泉州五中 王碧燕)

 It’s common knowledge that the woman in Leonardo da Vinci’s most famous painting seems to look back at observers, following them with her eyes no matter where they stand in the room. But this common knowledge turns out wrong.

A new study finds that the woman in the painting is actually looking out at an angle that’s 15.4 degrees off to the observer’s right—well outside of the range that people normally believe when they think someone is looking right at them. In other words, said the study author, Horstmann, “She’s not looking at you."This is somewhat ironic, because the entire phenomenon of a person’s gaze (凝视) in a photograph or painting seeming to follow the viewer is called the “Mona Lisa effect". That effect is absolutely real, Horstmann said. If a person is illustrated or photographed looking straight ahead, even people viewing the portrait from an angle will feel they are being looked at. As long as the angle of the person’s gaze is no more than about 5 degrees off to either side, the Mona Lisa effect occurs.

This is important for human interaction with on-screen characters. If you want someone off to the right side of a room to feel that a person on-screen is looking at him or her, you don’t cut the gaze of the character to that side—surprisingly, doing so would make an observer feel like the character isn’t looking at anyone in the room at all. Instead, you keep the gaze straight ahead.

Horstmann and his co-author were studying this effect for its application in the creation of artificial-intelligence avatars(虚拟头像) when Horstmann took a long look at the “Mona Lisa"and realized she wasn’t looking at him.

To make sure it wasn’t just him, the researchers asked 24 people to view images of the “Mona Lisa"on a computer screen. They set a ruler between the viewer and the screen and asked the participants to note which number on the ruler intersected Mona Lisa’s gaze. To calculate the angle of Mona Lisa’s gaze as she looked at the viewer, they moved the ruler farther from or closer to the screen during the study. Consistently, the researchers found, participants judged that the woman in the “Mona Lisa"portrait was not looking straight at them, but slightly off to their right.

So why do people repeat the belief that her eyes seem to follow the viewer? Horstmann isn’t sure. It’s possible, he said, that people have the desire to be looked at, so they think the woman is looking straight at them. Or maybe the people who first coined the term “Mona Lisa effect"just thought it was a cool name.

1. It is generally believed that the woman in the painting “Mona Lisa”\_\_\_\_\_\_\_\_\_\_\_.

A. attracts the viewers to look back

B. seems mysterious because of her eyes

C. fixes her eyes on the back of the viewers

D. looks at the viewers wherever they stand

2. What gaze range in a painting will cause the Mona Lisa effect?

 A. B. C. D.

3. The experiment involving 24 people was conducted to\_\_\_\_\_\_.

 A. confirm Horstmann’s belief

 B. create artificial-intelligence avatars

 C. calculate the angle of Mona Lisa’s gaze

 D. explain how the Mona Lisa effect can be applied

4. What can we learn from the passage?

A. Horstmann thinks it’s cool to coin the term “Mona Lisa effect”.

B. The Mona Lisa effect contributes to the creation of artificial intelligence.

C. Feeling being gazed at by Mona Lisa may be caused by the desire for attention.

D. The position of the ruler in the experiment will influence the viewers’ judgement.

答案DBAC

Passage5 (晋江一中 庄璐滢)

What’s small, buzzes here and there and visits flowers? If you said bees or hummingbirds, you got it. You wouldn’t be the first if you mixed the two up. Now a group of researchers even say we should embrace our history of considering the two together in the same group. The way scientists study bees could help them study hummingbird behavior, too.

Scientists first compared the two back in the 1970s when studying how animals search for food. The idea is that animals use a kind of math to make choices in order to minimize the work it takes to earn maximum rewards. Researchers at the time focused on movement rules, like the order in which they visited flowers, and where flowers were located relative to others. It was “almost like an algorithm(算法)"for efficient searching, said David Pritchard, a biologist at the University of St. Andrews in Scotland. Hummingbirds and bees had similar solutions.

As the field of animal cognition(认知) appeared, hummingbird and bee research parted. Neuroscientists and behavioral ecologists developed ways to study bee behavior in naturalistic settings. Hummingbird researchers compared hummingbirds to other birds and borrowed methods from psychology to study their ability to learn in the lab. To be fair, hummingbirds and bees differ. For example, hummingbirds have more advanced eyes and brains than bees. Honeybees and bumblebees are social; hummingbirds typically aren’t.

But however they perceive(感知) or process information, they both experience similar information, Dr. Pritchard said. In day-to-day searching for food, for example, hummingbirds may rely on more of a bee’s-eye view than a bird’s-eye view. Like other birds, they rely on landmarks, distances and directions to make maps when travelling long distances, but they don’t use these cues to find flowers. Move a flower just an inch or so away from where a hummingbird thought it was and it will hover over the flower’s original location. Dr. Pritchard is investigating if, like bees, hummingbirds engage in view matching — hovering, scanning snapshots of a place to its memory and using those as references later.

1. What is the center of research on hummingbirds and bees in the 1970s?

A. Memory.

B. Movement rules.

C. Reward calculating.

D. Information processing.

2. Which subject’s research methods were adopted to study the learning ability of Hummingbirds?

A. Math.

B. Biology.

C. Ecology.

D. Psychology.

3. How do researchers find out that hummingbirds are not like birds?

A. By setting them free.

B. By moving flowers.

C. By matching view.

D. By making maps.

4. Which of the following can be the best title for the text?

A. Hummingbirds and Bees

B. Hummingbirds in the Lab

C. New Trends in Studying Bees

D. Thinking of Hummingbirds as Bees

答案BDBD

Passage6 (晋江市养正中学 吴雪明)

Scientists think that growing garden grass could be the secret to solving our energy needs, and we may soon be able to replace our gasoline with “grassoline”.

The team, including experts from Cardiff University in Wales, has shown that hydrogen can be taken from grass in useful amounts with the help of sunlight and a cheap catalyst (催化剂) ---something that speeds up a chemical reaction without being used up.

It is the first time that this has been shown and it could lead to a sustainable (可持续的)way of making hydrogen, reported Asian News International. This could be an important kind of renewable energy because it is high in energy and it does not give out harmful gases when it is burned.

Study co-author Michael Bowker said, “This is really a green source of energy. Hydrogen is seen as an important future energy carrier as the world moves from fossil fuels to renewable energy, and our research has shown that even garden grass could be a good way of getting it. ”

Cellulose (纤维素) , which is a key part of plants and the biopolymer (生物聚合物)found in the largest numbers on the earth, could be a great source of hydrogen.

In its study, the team looked at the possibility of getting hydrogen from cellulose using sunlight and a simple catalyst.

This is called photocatalysis (光催化作用)and in it, the sunlight starts the catalyst, which then makes cellulose and water into hydrogen. The researchers studied the effectiveness of three metal-based catalysts, of which nickel (镍) especially interested the researchers, as it is a much more common metal than gold and palladium (钯) and it saves more money.

According to Bowker, producing hydrogen from cellulose using photocatalysis has not been studied in detail. The team, s research shows that large amounts of hydrogen can be produced using this method with the help of a bit of sunlight and a cheap catalyst.

The study shows that it is effective to use real grass taken from a garden. “This is important as it avoids the need to separate and clean up cellulose, which can be both difficult and costly, "said Bowker.

1. What are needed to get hydrogen from grass?

A. A catalyst and palladium. B. Water and cellulose.

C. Sunlight and a biopolymer. D. Sunlight and a catalyst.

2. Why is the new way of making hydrogen considered significant?

A. It is cheap, green and sustainable.

B. It is the best to produce the renewable energy.

C. It is more productive and efficient than other methods.

D. It can replace the way to make fossil fuels completely.

3. Why does nickel interest the researchers in making hydrogen from cellulose?

A. It can produce the largest amount of hydrogen.

B. It can avoid separating and cleaning up cellulose.

C. It is more common than other metals and costs less.

D. It works quicker than other metals during photocatalysis.

4. What does the author intend to tell us mainly in this passage?

A. Catalysts that could be taken from grass.

B. A new way of making hydrogen from cellulose.

C. The potential of hydrogen as a renewable energy.

D. The connection between hydrogen and photocatalysis.

答案DACB

Passage7 (晋江市养正中学 郁蔚)

People have different ways of dealing with a common cold. Some take over-the-counter (非处方的) medicines such as aspirin while others try popular home remedies(冶疗)like herbal tea or chicken soup. Yet here is the tough truth about the common cold： nothing really cures it.

So why do people sometimes believe that their remedies work? According to James Taylor, professor at the University of Washington, colds usually go away on their own in about a week, improving a little each day after symptoms peak, so it' s easy to believe it’s medicine rather than time that deserves the credit, USA Today reported.

It still seems hard to believe that we can deal with more serious diseases yet are powerless against something so common as a cold. Recently, scientists came closer to figuring out why. To understand it, you first need to know how antiviral (抗病毒的)drugs work. They attack the virus by attaching to and changing the surface structures of the virus. To do that, the drug must fit and lock into the virus like the right piece of a jigsaw (拼图) , which means scientists have to identify the virus and build a 3-D model to study its surface before they can design an antiviral drug that is effective enough.

The two cold viruses that scientists had long known about were rhinovirus (鼻病毒) A and B. But they didn’t find out about the existence of a third virus, rhinovirus C, until 2006. All three of them contribute to the common cold, but drugs that work well against rhinovirus A and B have little effect when used against C.

"This explains most of the previous failures of drug trials against rhinovirus, " study leader Professor Ann Palmenberg at University of Wisconsin -Madison, US, told Science Daily.

Now, more than 10 years after the discovery of rhinovirus C, scientists have finally built a highly-detailed 3-D model of the virus, showing that the surface of the virus is, as expected, different from that of other cold viruses.

With the model in hand, hopefully a real cure for a common cold is on its way. Soon, we may no longer have to waste our money on medicines that don' t really work.

1. What does the author think of popular remedies for a common cold?

A. They are quite effective. B. They are slightly helpful.

C. They actually have no effect. D. They still need to be improved.

2. How do antiviral drugs work?

A. By breaking up cold viruses directly.

B. By changing the surface structures of the cold viruses.

C. By preventing colds from developing into serious diseases.

D. By absorbing different kinds of cold viruses at the same time.

3. What can we infer from the passage?

A. The surface of cold viruses looks quite similar.

B. Scientists have already found a cure for the common cold.

C. Scientists were not aware of the existence of rhinovirus C until recently.

D. Knowing the structure of cold viruses is the key to developing an effective cure.

4. What is the best title for this passage?

A. Drugs against cold viruses B. Helpful home remedies

C. No current cure for common cold D. Research on cold viruses

答案CBDC

Passage8 (泉州七中 祝敏)

City trees grow faster and die younger than trees in rural forestry, a new study finds. Over their lifetimes, then, urban trees will likely absorb less CO2 from the air thah forest trees.

 As we all know, the earth would be freezing or burning hot without CO2. However, CO2 is a greenhouse gas, meaning it traps energy from the sun as/heat. That makes temperatures near the ground rise. Human activities, especially the widespread burning-of fossil(化石) fuels, have been sending extra greenhouse gases into the air. This has led to a rise in average temperatures across the globe.

 Studies had shown forests readily absorb CO2, but there hadn ’ t been much data on whether city trees grow, die and absorb CO2 at the same rate as forest trees do. So some researchers decided to find out.

 To figure out how quickly trees were growing, researchers tracked their diameters (the width of their trunks) between 2005 and 2014. A tree’s diameter increases as it grows, just as a person’s waist size increases as they gain weight. About half the weight of a tree is carbon, research has shown. Most of the rest is water. Over the nine years’ tracking, the researchers found city trees absorbed four times as much carbon from the air as forest trees. However, they were twice as likely to die. So over the lifetime of each type of tree, forest trees actually absorbed more CO2.

 City trees grew faster because they had less competition for light from their neighbors. In a forest, trees tend to grow close together, shading their neighbors. Street trees also benefit from higher levels of nitrogen (氮) in rainwater. Nitrogen helps plants grow. Waste gases from gas-burning cars also contain nitrogen, thus enriching city air with nitrogen. Later, rainwater may wash much of it to the ground. Some street trees may also have better access to water than trees in the country because the underground water pipes can leak.

1. What can he known about CO2 from paragraph 2?

A. It is one of the side effects of greenhouses.

B. It greatly accelerates the process of global warming.

C. It results from the widespread burning of fossil fuels.

D. It prevents the earth from becoming unsuitable to live on.

2. Why did researchers track the diameters of trees?

A. To know about their growth rates.

B. To find out how much they weigh.

C. To check whether they were healthy.

D. To assess the carbon amounts in them.

3. What advantage do city trees have over forest trees?

A. They are better at competing for light.

B. They can enjoy more shade from neighbors.

C. They can enjoy more water coming from the air.

D. They are more likely to access growth promoters.

4. What will probably be talked about if the passage is continued?

A. How urban trees can live longer.

B. Why city living makes trees die young.

C. How trees respond to dry soil conditions.

D. Why faster-growing trees absorb more CO2.

答案DADB

Passage9(永春一中 林雄凤)

 The seabird population on a small British island off the coast Devon and South Wales has increased quickly following the removal of rats.

 There has been a growth in the numbers of Manx shearwater, puffins and guillemots on Lundy Island 15 years after a conservation project to remove its rats ended. The project was launched 'in 2003 by the Landmark Trust, the National Trust and The Royal Society for the Protection of Birds (RSPB), and aimed to kill the rats because they were the biggest threat to the survival of the birds. A cull (选择性宰杀) costing 50,000 pounds was used to get rid of 40,000 rats on the island when puffin numbers fell to fewer than 10 pairs.

 Helen Booker, senior conservation officer for RSPB in south-west England, said the organization is delighted with the results. This study clearly shows how quickly and positively seabirds respond to the removal of non-native predators (捕猎者) , " she said. "Of course, we had expected major population in¬creases when the project was launched, but the scale of this recovery has far beyond our expectations."

 Dean Jones, the inspector on Lundy, which is managed by the Landmark Trust, said the recovery of the seabirds as a positive, but that it is important to remain cautious. "It is exciting to see this level of recovery in Manx shearwaters, one of our most important seabirds. In spring the island comes alive at night with the sound of these amazing birds. The increases in puffins, guillemots and razorbills are also very encouraging for the future of seabirds on Lundy and we are maintaining our attention to ensure rats cannot return to the island. "

 A recent study found that nearly 10 percent of endangered bird, mammal, amphibian and reptile species could be saved by culling invasive (入侵的) mammals such as cats and rats on 169 islands. But rat removal programs have been controversial with some animal rights activists, who have argued that the black rat is one of the country's most endangered mammals.

1. Why did British carry out the project to remove rats?

A. To kill invasive species. B. To save seabirds in danger.

C. To keep balance in nature. D. To decrease the rat's number.

2. What can we infer about the rat removal project?

A. It is favored by animal rights groups.

B. It started when guillemot is nearly dying out.

C. It has protected 10% of species on UK's 169 islands.

D. It contributes to more increases in seabirds than expected.

3. What will be done next according to Dean Jones?

A. Plan the future of seabirds. B. Speed up the recovery of seabirds.

C. Keep a careful watch for rats. D. Continue to drive away rats and cats.

4. Where is the text most likely from?

A. A news report. B.A research paper. C.A biology textbook. D.A medical magazine.

答案BDCA

Passage10 (晋江季延中学 吴珊妹)

Thirty-two people watched Kitty Genovese being killed right beneath their windows. She was their neighbor. Yet none of the 32 helped her. Not one even called the police. Was this on gunman’s cruelty? Was it lack of feeling about one’s fellow man?

Not so, say scientists John Barley and Bib Fatane. These men went beyond the headlines to seek the reasons why people didn’t act. They found that a person has to go through two steps before he can help. First he has to notice that is an emergency.

Suppose you see a middle-aged man fall to the side-walk. Is he having a heart attack? Is he in a coma from diabetes(糖尿病)? Or is he about to sleep off a drunk?

Second, and more important, the person faced with an emergency must feel personally responsible. He must feel that he must help, or the person won’t get the help he needs.

The researchers found that a lot depends on how many people are around. They had college students in to be tested. Some came alone. Some came with one or two others. And some came in large groups. The receptionist started them off on the tests. Then she went into the next room. There was a curtain between the testing room and the room into which she went. Soon the students heard a scream, the noise of file cabinets falling and a cry for help. All of this had been pre-recorded on a tape-recorder.

Eight out of ten of the students taking the test alone acted to help. Of the students in pairs, only two out of ten helped. Of the students in groups, none helped.

In other words, in a group, Americans often fail to act. They feel that others will act. They, themselves, needn’t. They do not feel any direct responsibility.

Are people bothered by situations where people are in trouble? Yes. Scientists found that the people were emotional, they sweated, and they had trembling hands. They felt the other person’s trouble. But they did not act. Their actions were shaped by the actions of those they were with.

1. The purpose of this passage is \_\_\_\_\_\_\_\_\_\_\_\_.
2. to persuade people to act in emergencies

B．to expose how people feel in emergencies

C．to tell what people should do in emergencies

D．to explain why people fail to act in emergencies

2. The experiment shows that people will act in emergencies when \_\_\_\_\_\_\_\_\_\_.

A．they are alone

B．they are in pairs

C．they are in groups

D．they are with their friends

3. The main reason why people fail to act when they stay together is that \_\_\_\_\_\_\_\_.

A．they are afraid of emergencies

B．others will act if they themselves hesitate

C．they are unwilling to get themselves involved

D．they have no direct responsibility for those who need help

4. What is the author’s attitude towards people who do not act in emergencies?

A．Critical. B．Neutral. C．Supportive. D．Sympathetic.

答案DADB

Passage11 (惠安一中 汪茗兰)

Technology offers conveniences such as opening the garage door from your car or changing the television station without touching the TV.

Now one American company is offering its employees a new convenience: a microchip implanted in their hands. Employees who have these chips can do all kinds of things just by waving their hands. Three Square Market is offering to implant microchips in all of their employees for free. Each chip costs $300 and Three Square Market will pay for the chip. Employees can volunteer to have the chips implanted in their hands. About 50 out of 80 employees have chosen to do so. The president of the company, his wife and their children are also getting chips implanted in their hands.

The chip is about the size of a grain of rice. Implanting the chip only takes about a second and is said to hurt only very briefly. The chips go under the skin between the thumb and forefinger. With a chip in the hand, a person can enter the office building, buy food , sign into computers and more , simply by waving that hand near a scanner. The chips will he also used to identify employees. Employees who want convenience, but do not want to have a microchip implanted under their skin, can wear a wristband(腕带)or a ring with a chip instead. They can perform the same tasks with a wave of their hands as if they had an implanted chip.

    Three Square Market is the first company in the United States to offer to implant chips in its employees. Epicenter, a company in Sweden, has been implanting chips in its employees for a while.

Three Square Market says the chip cannot track the employees. The company says scanners can read the chips only when they are within a few inches of them. “The chips protect against identity theft, similar to credit cards."The U.S. Food and Drug Administration approved the chips back in 2004, so they should be safe for humans, according to the company.

    In the future, people with the chips may be able to do more with them, even outside the office. Todd Westby is Chief Executive Officer of Three Square Market. He says, “Eventually, this technology will become standardized allowing you to use this as your passport, public transit, all purchasing opportunities, etc."

1. What is the third paragraph mainly about?

A. The substitutes of the chips.                            B. The potential risks of implanting the chips.

C. The places to implant the chips.                   D. The advantages of the chips.

2. What does the underlined word “them"in Paragraph 5 refer to?

A. the hands                 B. the scanners                 C. the employees                 D. the credit cards

3. We can infer that\_\_\_\_\_.

A. the chips have magic powers

B. the price of the chips is reasonable

C. the chips are very popular among the employees

D. most people suspect the application of the chips

4. Which of the following best describes Todd Westby's attitude towards the chips?

A. Defensive.                       B. Disappointing.                    C. Casual.                 D. Optimistic.

答案DBCD

Passage12 (惠安教师进修学校 郑惠琴)

Picture an iceberg (冰山).You'll probably imagine something white as snow rising up out of a blue sea. But icebergs can be all sorts of shades. They can be from a frosty blue to an attractive green.

Researchers and sailors have observed emerald(翠绿色)icebergs for years. A large piece of ice "mast-high" and "green as emerald" even appears in Samuel Taylor Coleridge's 1834 poem. But they haven't found out exactly why these icebergs look the way they do.

A new paper led by Stephen Warren was published. It all has to do with what icebergs are made out of. Icebergs break off glaciers(冰川)or ice shelves, which happens mainly around Antarctica and Greenland. They begin their lives as snowfall that accumulates over time. So icebergs contain air pockets with the form of bubbles that spread light. With some exceptions and rare lines, glacier ice tends to look bluish white.

At first, Warren guessed that the green was a product of melt carbon. And it came from rotting plants or sea animals. But samples(样本)didn't prove it. Another idea started to take shape after they had found a high concentration of iron in a sample of sea ice from the Amery Ice Shelf.

When glaciers rub across land, they produce what's known as glacier flour. It is a product of bedrock being ground clown by the moving mass. As glaciers move away, these remains are usually washed out into water. The particles are sometimes too small to be noticeable to your eyes. But on land, soil and rocks contain iron oxides that often have rosy colors, like reds, yellows, and browns---and since the sea ice contained 500 times more iron than the glacier ice, Warren wondered whether the remains were responsible for icebergs taking on a green appearance.

He doesn't know for sure. He's hoping to secure money so that he can return to the area and study the icebergs themselves.

1. Why is Samuel Taylor Coleridge's poem mentioned in the text?

A. It tells why icebergs look the way they do.

B. It describes vividly what icebergs are like.

C. It says causes of the appearance of icebergs.

D. It proves the existence of colorful icebergs.

2. What can we know about Stephen Warren's paper?

A. It draws on researchers' and sailors' views.

B. It is the record of the movement of icebergs.

C. It talks about how icebergs come into being.

D. It is a collection of various social phenomena.

3. What does the underlined word "it" in paragraph 4 refer to?

A. A sample of sea ice. B. Warren's first guess.

C. Warren's idea on iron. D. A product of melt carbon.

4. What is paragraph 5 mainly about?

A. The possible reason why icebergs look green.

B. Where most of icebergs eventually disappear.

C. How icebergs take in the colors from glaciers.

D. The way in which icebergs breaks off glaciers.

答案DCBA

Passage13 (洛江教师进修学校 黄旭)

Scientists at the University of Oxford have developed new artificial intelligence(AI) software to recognize and follow up the faces of chimpanzees(黑猩猩) in the wild. The new software will allow researchers and wildlife conservationists to significantly cut back on time spent analyzing videos, according to the new paper published in Science Advances.

For species(物种) like chimpanzees, which have complex social lives and live for many years, getting photos of their behavior taken from short-term field research can only tell us so much, "says Dan Schofield, researcher and DPhil student at Oxford University’s Private Models Lab, School of Anthropology. “By taking advantage of the power of machine learning to unlock large video files , it makes it possible to measure behavior over the long term. ’’

The computer model was trained using over 10 million images(影像):from Kyoto University s Primate Research Institute(PRI) video files of wild chimpanzees in Guinea,West Africa. The new software is the first to continuously track and recognize individual a wide range of poses, performing with high accuracy in difficult conditions such as low lighting and poor image quality.

“Access to this large video file has allowed us to use deep neural networks to train models to a degree that was previously not possible,"says Arsha Nagrad, co-auther of the study and DPhil student at the Department of Engineer Science ,University of Oxford ."Additionally, our new software differs from previous primate face recognition software in that it can be applied to videos with limited manual intervention(人工干预) , saving hours

of time. ”

The technology can be potentially used to monitor species for conservation Although the present application focuses on chimpanzees, the AI software provided will be applied to other species, and help drive the adoption of AI systems to solve(解决) a range of problems in the wildlife sciences.

1. What is the purpose of developing the new soft?

A.To save wildlife researchers’ time spent in the labs.

B.To keep track of wildlife conservationists' behaviors.

C.To protect chimpanzees and help them to live longer .

D.To recognize and track the faces of wild chimpanzees.

2. What does the underlined word “it"in paragraph 2 refer to?

A.Getting photos. B.Analyzing videos.

C. A powerful machine D. The new AI software.

3. What does paragraph 4 mainly talk about?

A.The working principle of the new software. B. Some limitations of using the new software.

C. The unique advantages of the new software. D.Controversial attitudes to the new software.

4. What can be known from the last paragraph?

A.Technology advance is the final goal of science

B.The new software won’t just be applied to chimpanzees.

C.AI systems are widely used in the wildlife sciences.

D.The application of the new technology isn’t easy.

答案DDCB

Passage14 (德化教师进修学校 林春红)

If maths is the language of the universe, bees may have just uttered their first words. New research suggests these busybodies of the insect world are capable of addition and subtraction (减法)—using colors in the place of plus and minus symbols.

In the animal kingdom, the ability to count—or at least distinguish between differing quantities—[isn’t unusual](https://royalsocietypublishing.org/doi/full/10.1098/rstb.2016.0507): It has been seen in frogs, spiders, and even fish. But solving equations (方程式) using symbols is rare, so far only achieved by famously brainy animals such as chimpanzees and African grey parrots.

Building on previous research that says the social insects can count to four and [understand the concept of zero](https://www.sciencemag.org/news/2018/06/bees-understand-concept-zero), researchers wanted to test the limits of what their tiny brains can do.

Scientists trained 14 bees to link the colors blue and yellow to addition and subtraction, respectively. They placed the bees at the entrance of a Y-shaped maze (迷宫), where they were shown several shapes in either yellow or blue. If the shapes were blue, bees got a reward if they went to the end of the maze with one more blue shape (the other end had one less blue shape); if the shapes were yellow, they got a reward if they went to the end of the maze with one less yellow shape.

The testing worked the same way: Bees that “subtracted"one shape when they saw yellow, or “added"one shape when they saw blue were considered to have aced the test. [The bees got the right answer 63% to 72% of the time](http://advances.sciencemag.org/content/5/2/eaav0961), depending on the type of equation and the direction of the right answer—much better than random guesses would allow—the researchers report today in *Science Advances*.

Though the results came from just 14 bees, researchers say the advance is exciting. If a brain about 20,000 times smaller than ours can perform maths using symbols, it could pave the way to novel approaches in artificial intelligence (AI) and machine learning. Just don’t ask the bees to do your homework anytime soon.

1. Why do the scientists conduct the research?

 A. To teach them maths. B. To test the power of tiny brains.

 C. To explain the meaning of colors. D. To get access to machine learning.

2. What does the underlined word “aced"in Paragraph 5 probably mean?

 A. Given up. B. Entered for. C. Got through. D. Checked over.

3. What might the research make contributions to?

 A. Language acquisition. B. Arithmetic learning.

 C. Protection of animals. D. Development of AI.

4. What can be the best title for the text?

 A. Bees “Like"Counting

B. Bees “Tell"Colors Apart

 C. Bees “Perform"Maths Using Shapes

 D. Bees “Get"Addition and Subtraction

答案BCDD

Passage15 (泉州培元中学 黄开连)

An international team of scientists involving The University of Western Australia's School of Molecular Sciences, the ARC Centre of Excellence in Plant Energy Biology and Lund University has made the surprising discovery that a plant's reaction to rain is close to one of panic.

The research, published in Proceedings of the National Academy of Sciences, revealed complex [chemical signals](https://phys.org/tags/chemical%2Bsignals/) are triggered when [water](https://phys.org/tags/water/) lands on a plant to help it prepare for the dangers of rain.

UWA Professor Harvey Millar said after spraying plants with water and observing the effect, the researchers noticed a [chain reaction](https://phys.org/tags/chain%2Breaction/) in the plant caused by a protein called Myc2.

"When Myc2 is activated, thousands of genes spring into action preparing the plant's defences," Professor Millar said. "These warning signals travel from leaf to leaf and induce a range of protective effects."

"As to why plants would need to panic when it rains, strange as it sounds, rain is actually the leading cause of disease spreading between plants."

"When a raindrop splashes across a leaf, tiny droplets of water ricochet in all directions. These droplets can contain bacteria, viruses, or fungal spores. A single droplet can spread these up to 10 metres to surrounding plants."

Evidence also suggests that when it rains, the same signals spreading across leaves are transmitted to nearby plants through the air.

"One of the chemicals produced is a hormone called [jasmonic acid](https://phys.org/tags/jasmonic%2Bacid/) that is used to send signals between plants," Professor Millar said.

"If a plant's neighbors have their defence mechanisms turned on, they are less likely to spread disease, so it's in their best interest for plants to spread the warning to nearby plants.

"When danger occurs, plants are not able to move out of the way so instead they rely on complex signaling systems to protect themselves."

Professor Millar said it was clear [plants](https://phys.org/tags/plants/) had an intriguing relationship with water, with [rain](https://phys.org/tags/rain/) a major carrier of disease but also vital for a plant's survival.

1. Myc2 is activated to \_\_\_\_\_\_\_\_\_\_.

A. cause panic B. defend the plant

C. spread the disease D. spring into action

2．We can learn from the the last 5 paragraphs that ．

A．Signals are transmitted to nearby plants through raindrops.

B．Jasmonic acid is used to send signals among leafs.

C．It’s useless for plants to spread the warning to nearby plants.

D．Plants defend themselves using very complicated signaling systems.

3．What does the underlined word “intriguing"in the last paragraph probably mean?

A．interesting B．important

C．disappointing D．frustrating

4．Which of the following can be the best title of the passage?

A．A Plant’s Reaction To Rain

B．Signals Triggered When Water Lands

C．Why Plants Panic When It Rains

D．Plants And Raindrops

答案BDAC

Passage16 (安溪第一中学 何丽霞)

 Record fires sweeping across the Amazon this month have been grabbing global headlines as scientists and environmental groups are worried that they will aggravate climate change crisis and threaten biodiversity(生物多样性) .

 As the largest rainforest in the world, the Amazon is often called “the lungs of the world”. It is also home to about 3 million species of plants and animals, and 1 million indigenous(当地的) people. The vast swaths(大片土地) of rainforest play an important role in the world’s ecosystem because they absorb heat instead of it being reflected back into the atmosphere. They also store carbon dioxide and produce oxygen, ensuring that less carbon is released, mitigating the effects of climate change.

 “Any forest destroyed is a threat to biodiversity and the people who use that biodiversity,"Thomas Lovejoy, an ecologist at George Mason University told *National Geographic*. “The overwhelming threat is that a lot of carbon goes into the atmosphere,"he stressed. “In the midst of the global climate crisis, we cannot afford more damage to a major source of oxygen and biodiversity. The Amazon must be protected,"U.N. Secretary General Antonio Guterres said.

 Data from the National Institute for Space Research (INPE) show that the number of forest fires in Brazil quickly increased by 82 percent from January to August this year from a year ago. A total of 71,497 forest fires were registered in the country in the first eight months of 2019, up from 39,194 in the same period in 2018, INPE said. “We estimate that the forest areas in the Brazilian Amazon have decreased something between 20 and 30 percent compared to the last 12 months,"Carlos Nobre, a researcher at the University of Sao Paulo, told German broadcaster *Deutsche Welle*.

 Brazil owns about 60 percent of the Amazon rainforest, whose degradation could have severe consequences for global climate and rainfall. The extent of the area ruined by fires has yet to be determined, but the emergency has transcended(超出) Brazil’s borders, reaching Peruvian, Paraguayan and Bolivian regions.

1. What is the second paragraph mainly talking about?

A. The effects of climate change.

B. The role of the Amazon rainforest.

 C. The results of the Amazon rainforest fires.

D. The causes of the decreasing biodiversity.

2. Which of the following best explains “mitigating"underlined in Paragraph 2?

 A. Easing. B. Causing. C. Worsening. D. Benefitting.

3. What can we learn from Thomas’s and Antonio’s words?

 A. The biodiversity makes the rainforests unique.

 B. The rainforest fires result in serious consequences.

 C. The global climate crisis brings more rainforest fires.

 D. The dry weather leads to the rainforest fires.

4. Why does the author list the numbers in Paragraph 4?

 A. To prove the importance of rainforest. B. To show the influence of forest fires.

 C. To explain the process of the research. D. To present the reduction of rainforest areas.

5. Which section of a magazine is this text probably taken from?

 A. Sports and music. B. Science and technology.

C. Nature and geography. D. Business and culture.

答案BABDC

Passage17 (石光中学 邱亚远)

Getting stuck in a traffic jam is one of the most boring problems for people living in big cities. The fact that you're moving so slowly leads too stress, anger and the wish that your car could just fly over the traffic like an airplane.

    Soon, however, that wish could come true. On May 8, US car-renting company Uber showed off what it described as "the transportation mode of the future: on-demand air transport," reported ABC News.

    According to Nikhill Goel, head of products for Uber Air, the company's air taxi service may launch test flights in the US cities of Dallas and Los Angeles, as well as Dubai in the United Arab Emirates, as early as 2020. If everything goes according to plan, passengers will be able to fly to work by 2023.

    When the Olympics comes to Los Angeles in 2028. Uber "expects to have hundreds, if not thousands, of its aircraft in the skies." Goel told Newsweek.

    So what would Uber's flying vehicles be like?

    They are small, electric aircraft that take off and land vertically (垂直地) , and they give off zero emissions (排放) and are quiet enough to operate in cities.

    Just like an airplane, the vehicles will have fixed wings to help them glide. But while a helicopter has just one big fixed rotor (定量). Uber's vehicles will have multiple rotors , which will help increase fuel efficiency (效率) while reducing emissions and noise.

    Because of these fixed wines and multiple rotors. Uber's flying taxis "should be quieter and safer than a helicopter." reported ABC News.

    However, the service still has a long way to go before it's ready to accept passengers. For example, to avoid any potential accidents. Uber is working with NASA to study air traffic control problems associated with low-flying aircraft. But just as Dubai's Mayor Betty Price said in a news release. "This program is revolutionary and future -oriented (面向未来的)."

1. Uber's flying taxis are expected to start to take passengers in\_\_\_\_\_\_.

A. 2020 B. 2023 C. 2028 D. 2030

1. How are Uber's flying taxis different from helicopters?

A. They have one big rotor B. They need more fuel to fly.

C. They have fewer fixed wings D. They should be quieter and safer

1. Which is true about the flying cars according to the passage?

A. They can be as efficient as airplanes and helicopters

B．They must be in larger number a few years later.

C. They nearly do no harm to the environment.

D. They will surely help passengers avoid accidents.

1. What is the passage mainly about?

A. Ubers plan to launch flying taxis

B. The advantages of Ubers flying taxis

C. Different opinions about Uber's flying taxis.

D. The difficulties Uber is facing in testing flying vehicles

答案BDCA

Passage18 (泉港一中 李敏)

Electrical devices(仪器) could soon use power made by human energy. Scientists say they have developed an experimental device that produces electricity from the physical movement of a person walking. British scientist Max Donelan and other scientists in Canada and the United States developed the device.

The device connects to a person’s knee. As the person walks, the device captures energy each time the person slows down. To do this, the device helps with the slowing down movement of the leg. The movements of the walking person push parts of a small machine that produces electricity. Using the device, an adult walking quickly could produce thirteen watts of electricity in just a minute. Donelan says walking at that speed could produce enough power to operate a laptop computer for six minutes.

There are several possible uses for the device. Developers say it could help people who work in areas without electricity to operate small computers. The device could also be used in hospitals to operate heart pacemakers(起搏器). It could even be used to assist in the movement of robotic arms and legs.

The experimental version of the device weighs about one and a half kilograms, but it is too costly for most people to buy. But the researchers hope to make a lighter, less costly version. An improved version shou1d be ready in one year.

The developers hope the device will one day help developing countries. Near1y twenty five percent of people around the world live without electric power.

A similar product was invented in 2005 by Larry Rome of the University of Pennsylvania. He created a bag carried on a person’s back that also produces power from wa1king.

The knee device does not produce as much electricity as the bag. But the bag requires the walker to carry a load of twenty to thirty kilograms.

1. The second paragraph mainly talks about .

A. who developed the device

B. how the device works

C. several possible uses for the devices

D. how much electricity the device can produce

2. Compared with the device designed by Larry Rome, this new device .

A. produces power without adding more loads to the walker

B. can produce more power in a much shorter time

C. needs to be equipped with a battery

D. can help the walker wa1k faster

3. From the passage, we can learn that the electrical device can .

A. help housewives operate the washing machine

B. make it much easier for us to go online

C. produce more electricity than that invented by Larry Rome

D. be applied in medicine to operate heart pacemakers

4. What would be the best title for the passage?

A. First device powered by walking wi1l soon be on the market

B. Advanced technology brings in a new way to operate heart pacemakers

C. Device gives new meaning to the idea of power walking

D. Human energy will become a main source of electricity

 答案BADC

Passage19 (惠安嘉惠中学 刘约航)

*Brrriiinnng*. The alarm clock announces the start of another busy weekday in the morning. You jump out of bed, rush into the shower, into your clothes and out the door with hardly a moment to think. A stressful journey to work gets your blood pressure climbing. Once at the office, you glance through the newspaper with depressing stories or reports of disasters. In that sort of mood, who can get down to work, particularly some creative, original problem-solving work?

The way most of us spend our mornings is exactly opposite to the conditions that promote flexible, open-minded thinking. Imaginative ideas are most likely to come to us when we’re unfocused. If you are one of those energetic morning people, your most inventive time comes in the early evening when you are relaxed. Sleepy people’s lack of focus leads to an increase in creative problem solving. By not giving yourself time to tune into your wandering mind, you’re missing out on the surprising solutions it may offer.

The trip you take to work doesn’t help, either. The stress slows down the speed with which signals travel between *neurons* (神经细胞), making inspirations less likely to occur. And while we all should read a lot about what’s going on in the world, it would not make you feel good for sure, so put that news website or newspaper aside until after the day’s work is done.

So what would our mornings look like if we wanted to start them with a full capacity for creative problem solving? We’d set the alarm a few minutes early and lie awake in bed, following our thoughts where they lead. We’d stand a little longer under the warm water of the shower, stopping thinking about tasks in favor of a few more minutes of relaxation. We’d take some deep breaths on our way to work, instead of complaining about heavy traffic. And once in the office—after we get a cup of coffee—we’d click on links not to the news of the day but to the funniest videos the web has to offer.

1. According to the author, we are more creative when we are \_\_\_\_\_\_\_.

A. focused

B. relaxed

C. awake

D. busy

2. What does the author imply about newspapers?

A. They are solution providers.

B. They are a source of inspiration.

C. They are normally full of bad news.

D. They are more educational than websites.

3. By “tune into your wandering mind"(in Para. 2), the author means “\_\_\_\_\_\_\_”.

A. wander into the wild

 B. listen to a beautiful tune

 C. switch to the traffic channel

 D. stop concentrating on anything

4. The author writes the last paragraph in order to \_\_\_\_\_\_\_.

 A. offer practical suggestions

B. summarize past experiences

 C. advocate diverse ways of life

D. establish a routine for the future

答案BCDA

Passage20 (铭选中学王朝霞)

NASA’s Curiosity vehicle recently recorded the largest level of methane（甲烷）ever measured during its seven-year Mars mission. The discovery is exciting because the existence of methane gas could support the case for life on Mars.

Methane has no color or smell. A special instrument on Curiosity’s Mars Science Laboratory recorded the increased gas level. The device, called a laser spectrometer, measures levels of chemical elements and gases in the Martian atmosphere. In addition to methane, the instrument can record levels of water and CO2. Nearly all the methane gas found in Earth’s atmosphere is produced by biological activity. It usually comes from animal and plant life. But it can also be formed by geological（地质的）processes, such as interactions between rocks and water. NASA said the increased methane was measured to be about 21 parts per billion by volume (ppbv). One ppbv means that if you take a volume of air on Mars, one billionth of the volume of air is methane.

It was not the first time Curiosity has found methane gas in the Martian atmosphere. About a year ago, NASA announced that Curiosity had discovered sharp seasonal increases in the gas.  This time, NASA said the measured methane gas level was clearly larger than any others observed in the past. NASA officials even temporarily stopped Curiosity’s other activities to investigate further.

“It’s exciting because microbial（微生物的）life is an important source of methane on Earth,” NASA said in a statement announcing the discovery. However, Curiosity’s team carried out a follow-up methane experiment that showed a sharp drop in levels of the gas. The second examination found the level was less than one part per billion by volume. That number was close to the background levels Curiosity sees all the time. The rise and fall of the methane gas levels left NASA scientists with more questions than answers. The scientists are continuing to study possible causes for the sudden increase. The methane mystery continues.

Curiosity does not have instruments that can exactly identify whether the source of the methane is biological or geological. One leading theory is that methane is being released from underground areas created by possible life forms that disappeared long ago. Even though Mars has no active volcanoes, scientists believe it is also possible that methane is being produced by reactions involving carbon materials and water.

A clearer understanding of methane levels over time could help scientists determine where they’re located on Mars. Scientists hope this understanding will come as Curiosity continues to collect methane data in its search for possible life.

1. Curiosity discovered \_\_\_\_\_\_\_\_.

 A. the largest methane gas level ever on Mars B. the existence of life on Mars

 C. the reason for the increased methane D. interactions between rocks and water

2. Why did NASA officials once stop Curiosity’s other activities?

 A. To seek possible life existing on Mars.

 B. To check the quality of Curiosity’s mission.

 C. To find seasonal increases in the methane gas.

 D. To further examine the methane gas level on Mars.

3. What can we learn from the last three paragraphs?

 A. Causes for the change of methane have been proved by Curiosity.

 B. Curiosity has proved the location of methane by instruments.

 C. Scientists think underground materials’ reactions may produce methane.

 D. Identifying the source of methane helps scientists search for possible life on Mars.

4. The passage is probably taken from \_\_\_\_\_\_\_\_.

 A. a geography textbook           B. a science newspaper

 C. a health magazine              D. a travel brochure

答案ADCB

Passage21

Cao Yuan, a PhD student from China, had two papers published on strange behaviour in atom-thick layers of carbon that have opened up a new field of physics．

Pablo Jarillo-Herrero’s group at MIT was already layering and rotating (旋转) sheets of carbon at different angles when Cao joined the lab in 2014. Cao’s job was to find out what happened when one graphene (石墨烯) sheet was twisted only slightly with respect to the other, which one theory predicted would thoroughly change the material’s behaviour．

Many physicists doubted the idea. But when Cao set out to create the subtly twisted stacks, he spotted something strange. Exposed to a small electric field and cooled to 1.7 degrees above absolute zero, the graphene---which ordinarily conducts electricity---became an insulator. That by itself was surprising. But the best was yet to come: with a slight change to the field, the twisted sheets became a superconductor, in which electricity flowed without resistance．

The ability to get atom-thick carbon into a complex electronic state through a simple rotation now has physics demanding to engineer exciting behavior in other twisted 2D materials. Some even hope that graphene could shed light on how more-complex materials superconduct at much higher temperatures. “There are so many things we can do,"says Cory Dean, a physicist at Columbia University. “The opportunities at hand now are almost irresistible.”

Hitting graphene’s “magic angle”---a rotation between parallel sheets of around 1.1°---involved some trial and error, but Cao was soon able to do it reliably. His experimental skill was extremely important, says his supervisor Jarillo-Herrero. Cao pioneered a method of tearing a single sheet of graphene so that he could create a stack of two layers, from which he could then fine-tune alignment (微调校准)．

Cao loves to take things apart and rebuild them. A heart, he is “a tinkerer”, his supervisor says. On his own time, this means photographing the night sky using homemade cameras and telescopes---pieces of which usually lie across Cao’s office. “Every time I go in, it’s a huge mess, with computers taken apart and pieces of telescope all over his desk, "says Jarillo-Herrero．

1. What is Cao Yuan’s achievement?

A. Creating a method of piling carbon．

B. Finding the superconductivity of graphene．

C. Making equipment to twist graphene．

D. Starting research on a new field of physics．

2. What do we know from Cory Dean’s words?

A. The finding can be applied to all materials．

B. It is certain that many new discoveries are on the way．

C. The discovery suggests potential for other twisted 2D materials．

D. Physicists have been pushed to find more atom-thick carbon layers．

3. What does Jarillo-Herrero think is key to Cao Yuan’s discovery?

A. His method of tearing sheets．

B. His knowledge of physics．

C. His curiosity about graphene．

D. His skill in experiments．

4. What can we infer about Jarillo-Herrero?

A. He is an expert in telescope．

B. He thinks highly of Cao Yuan．

C. He appreciates messy offices．

D. He follows Cao Yuan's research．

答案BCDB

Passage22

Over a hundred years ago in 1911, something strange was found in the glaciers of Antarctica. Crilffith Taylor ---- an Australian geologist, had discovered a blood-red stream pouring out of the ice cascades (瀑布) of Talor Glacier!

Popularly known as the Blood Falls, scientists had not been able to find the reason behind the blood-red liquid flowing through the ice----until recently. The mystery of the Blood Falls had finally been solved.

When these falls were first discovered, scientists had believed that the red colour came from a large amount of red algae (海藻) concentrated in the water. Red algae contain a pigment (色素) which reflects red light, making the algae appear red.

This theory made sense, until it was later found that algae do not play a part in the red color of the flowing liquid at all. What really causes Talor Glacier's waters to appear blood-red is the presence of iron oxide in the liquid. The waters of the blood falls are rich in salt and iron content, and when this water comes in contact with the air, it turns red--just like rust! The water in these falls is often referred to as "brine" by scientists because of the high salt content in the water.

This reasoning behind the red colors of the falls was found back in 2003. However, the entire mystery had not yet been solved. How is it then that the Blood Falls are not frozen?

Researchers at the University of Colorado and University of Alaska found that inside the glacier, there was a network of channels and reservoirs that move the water around. Salt water has a lower freezing temperature. In addition, when any substance undergoes a change in state, it gives off heat. Therefore, the brine actually warm itself up while it's freezing! How this works is that when the brine is flowing through the Talor Glacier, some of it does freeze. As a result of changing state from liquid to ice, the brine gives off heat. This heat is enough to keep the rest of the brine in liquid form, which is why it flows out of the glacier.

Incredible new chemistry facts found, and mystery solved!

1. According to the text, the red algae theory was once considered\_\_\_\_\_\_.

A. ridiculous B. impractical C. reasonable D. complex

2. Why does the Blood Falls look red in colour?

A. Because its liquid is rich in red algae.

B. Because the flowing liquid reflects red sunlight.

C. Because the air is thin and rare in Antarctica.

D. Because there is too much salt and iron in its water

3. What is the main reason for the Blood Falls’ not freezing?

A. The water continued flowing constantly.

B. There is too much salt in the water.

C. The brine gives off heat while freezing.

D. Temperatures aren't high enough for flowing water.

4. What is the passage mainly about?

A. The mystery of the Blood Falls. B. The discovery of the blood glacier.

C. The birth of the Talor Glacier. D. The flowing red waterin Antarctica.

答案CDCA