GE9 UNIT 4 SCIENCE 1

1. **Read and choose the correct answer to complete the text:**

The human eye is one of the most fascinating organs in the body. It contains a light-sensitive layer called the **(1)**_____, which is made up of millions of **(2)**_____ that detect light and color. These receptors are divided into two main types: rods and cones. **(3)**_____ are responsible for color vision. Each type of cone responds to different wavelengths of light—short, medium, or long—which roughly correspond to blue, green, and red. This system is known as **(4)**_____ vision, and it enables humans to perceive a vast range of colors and subtle **(5)**_____ of color. However, not everyone **(6)**_____color in the same way. People who are **(7)**_____ have one or more types of cones that do not function properly. This condition **(8)**_____ first described in the 18th century, and since then, many studies have been carried out to understand how it affects the brain's interpretation of color. In recent years, scientists have **(9)**_____ studying how gene therapy could help correct certain types of color blindness. Interestingly, some animals—such as certain birds and fish—have four types of cones instead of three. Their vision is called **(10)** _____, which means they can detect an even wider range of wavelengths and perceive colors that are invisible to humans. Several experiments **(11)**_____been conducted to determine whether a small number of humans might also possess this rare ability. The human eye has been described **as** one of nature's most advanced sensory organs. Modern technology has been improving our understanding **(12)**_____ how light **(13)**_____processed by the retina and how the brain interprets these signals to create the images we see. Many discoveries have been made in this field, and more breakthroughs are expected in the future. Although small, the eye allows us to perceive the beauty and variety of the world around us—a remarkable ability that continues to inspire scientists and artists alike.

1	**a.** cone	**b.** retina	**c.** receptor	**d.** len
2	**a.** retina	**b.** cells	**c.** lens	**d.** receptors
3	**a.** shades	**b.** cones	**c.** rods	**d.** genome
4	**a.** trichromatic	**b.** genome	**c.** tetrachromatic	**d.** inoculation
5	**a.** genes	**b.** sides	**c.** aspects	**d.** shades
6	**a.** perceives	**b.** takes	**c.** receives	**d.** watches
7	**a.** colorful	**b.** colorless	**c.** color-blind	**d.** coloristic
8	**a.** has	**b.** been	**c.** was	**d.** were
9	**a.** been	**b.** were	**c.** also	**d.** to
10	**a.** retina	**b.** genome	**c.** tetrachromatic	**d.** trichromatic
11	**a.** were	**b.** has	**c.** have	**d.** are
12	**a.** about	**b.** as	**c.** that	**d.** of
13	**a.** been	**b.** have	**c.** has	**d.** is

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2. Complete the following **PASSIVE** sentences **(PAST SIMPLE PASSIVE- PRESENT SIMPLE PASSIVE- PRESENT PERFECT PASSIVE)** by writing the correct form of the verbs in brackets.

Vaccines _____(use) by the ancient Chinese 2000 years ago.

Nowadays, most older people _____(vaccinate) against the flu every year.

When _____the vaccine for smallpox _____(develop)?

So far, the details of around a hundred patients _____(record) in the database.

In 2020, millions of people _____(kill) by a virus known as COVID-19.

Why _____ the research results _____ (not publish) yet?

Recently, some complex operations _____(carry) out by surgical robots.

An eight-year-old boy _____(inoculate) against cowpox in 1796.

A lot of money _____(raise) for medical research over the past few years.

3. Complete the sentences with the following **CONJUNCTIONS: when- while- after- before**

Do you understand about how birds find food _____learning that they are tetrachromatic?

Did you see anything colorful _____walking to school this morning?

Scientists had to understand the behavior of receptors _____ developing new treatments for color blindness.

The brain processes colors differently _____ receiving information from damaged cones.

Researchers reviewed previous studies _____ conducting their own experiment.

Did you notice any change in your vision _____ looking at the bright light for a few seconds?

You can observe more detail _____ viewing an object through a magnifying lens.

The experiment showed clear results _____ repeating the test several times.

Scientists discovered new details about the retina _____ studying how receptors react to light.

The brain can interpret images faster _____ comparing data from both eyes.

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4. Read and choose the correct answer:

Student life and technology	
Last Saturday, as my grandfather drove me and my sister home from a dinner to celebrate his birthday, he got frustrated at not being able to remember the name of the singer of a song he'd just heard on the radio. Without a second thought, I grabbed my smartphone, searched for the song and found the name, Bob Dylan. For me and my friends, this is a completely natural course of action, but it totally astonished my grandfather, who didn't understand how I had checked the information so quickly. My sister and I laughed and explained, but afterwards, it made me think about how much I depend on technology. The list of the ways I use technology is endless: writing, planning, socialising, communicating and shopping, to name a few. When I reflected on its impact on my education, I saw that, for my fellow students and I, technology has been significant in many ways. Returning to the story of my grandfather and the smartphone, he had asked me more about how I used it and about university life. He said he thought we had an easy life compared to previous generations. My sister caught my eye and we exchanged a smile. But whereas she was thinking our grandfather was just being a typical 65-year-old, I could see his point. Not only are we lucky enough to have the same educational benefits as those of previous generations, we have so many more as well. We still have walk-in libraries available to us, and I can see why some students choose to find and use resources in these distraction-free locations. However, the only option for studying used to be sitting in these libraries with as many books from your reading list as you could find, yet now a single search for your chosen study topic online can immediately provide access to a huge range of resources. At universities, interaction between students and university staff is another area that has changed considerably with developments in technology. We can have face-to-face time with our tutors when we need it, and also communicate using our electronic gadgets from the comfort of our homes, or on the bus. The most popular means of doing this is via instant messaging or social media – email is often considered too	**1 What does the writer illustrate by describing the incident in the car?** **A** the older generation's frustration at people's dependence on technology **B** how unaware young people are of some effects of technology **C** the difference in attitudes to technology between two generations **D** how technology helps different generations communicate **2 What did the writer think of her grandfather's comment, mentioned in the second paragraph?** **A** It showed how out-of-date he was. **B** It had an element of truth in it. **C** It was an annoying thing to say. **D** It made her feel sorry for him. **3 What does the writer say about getting study resources from libraries?** **A** She considers libraries more preferable places for study than home. **B** She cannot understand why anyone chooses to go to a library now. **C** She appreciates the fact that people can still study in libraries if they want to. **D** She thinks libraries are limited by the quantity of resources they can store. **4 What disadvantage of new technology does the writer mention in the third paragraph?** **A** Those who can afford the best gadgets gain an unfair advantage.

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slow, and it has become unacceptable for messages to be unanswered for any length of time. While this puts an extra strain on the university's academic support team, who usually have to answer the queries as they come in, we students are greatly benefitted.

It's important that we remember to appreciate how much the advances in technology have given us. Electronic devices such as tablets, smartphones, and laptops are now standard equipment in most classrooms and lecture halls, and why shouldn't they be? The replacement of textbooks with tablets allows students the luxury of having up-to-date, interactive and even personalised learning materials, with the added benefit of them not costing the earth.

When we compare the student life of the past and that of the present day, it is tempting to focus on the obvious differences when it comes to technology. In actual fact, students are doing what they've always done: embracing the resources available and adapting them in ways which allow them to work more efficiently and to live more enjoyably. The pace of change in technology continuously gathers speed, so we have to value each innovation as it happens.

B Sometimes slow internet connections make communication difficult.
C A heavier workload is created for teaching staff at the university.
D Students cannot escape from dealing with university issues.

5 What is the purpose of the question 'Why shouldn't they be?' in the fourth paragraph?

A to express an opinion
B to introduce some problems
C to make a criticism
D to indicate uncertainty

6 What is the writer's conclusion about students today in the final paragraph?

A They have such different lives to previous generations that it's unwise to compare them.
B They deal better with change than previous generations did.
C They take advantage of new resources more quickly than previous generations did.
D They are behaving in a similar way to previous generations of students.

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