

2018 本試験 第6問 です。「6月進研」の対策にしましょう。

- (1) History teaches us that technology and associated discoveries have changed how we understand the world. Many technological devices provide additional range and power to our natural capacities, such as our five senses. Among these devices, many enable us to see things that we cannot see with the naked eye. This change from invisible to visible has led to tremendous growth in our comprehension of the world and has strongly influenced our ways of thinking.
- (2) In the 17th century, a scientist noticed that by holding two lenses together in a certain way he could make an object appear larger. He used this technique to construct the first simple telescope. Using these archaic telescopes, early scientists were able to describe the surface of the Moon in detail and to see that Jupiter had at least four such satellites. Since that time, people have developed various devices that expand our range of sight, thus revealing facts about the universe that lies beyond the Earth. The telescope continues to offer us new views concerning things beyond our immediate reach.
- (3) Later, the microscope was developed using principles similar to the telescope. The microscope allows us to study objects we normally cannot see because they are too small. Looking through a microscope opened up an entirely new world to scientists. Before the invention of the microscope, they couldn't see the structures of human tissues or cells in plants and animals. When they saw these things, they became aware that some things that they had thought were whole and could not be divided, actually consisted of smaller components. These were only visible with the assistance of microscopes. Today, electron microscopes allow us to investigate even smaller items, such as molecules. These advances have altered our concepts regarding the composition of things in the world.
- (4) The invention of the camera also made the invisible world visible. In the world, everything is changing. Some things change faster than we can see. The camera is a tool that gives us the power to freeze change at different points in time. Series of pictures have revealed how birds move in flight and athletes run. The camera can also help us see changes that are so gradual that we usually don't notice them. For example, by comparing photos of the same scene taken months or years apart, we can gain insights into how societies change. There are many other ways besides these in which the camera has changed our perceptions of the world.
- (5) In the late 19th century, machines that used the newly discovered X-rays revolutionized the way in which we looked at things. Rather than seeing only the surface of an object, we gained the ability to look into it or through it, bringing the inner elements of many things into our range of view. This capability proved practical in the workplace, useful in laboratories and museums, and instructive in universities. One of the most important applications was in medicine. Doctors often had difficulty diagnosing illnesses or finding problems inside the body. X-rays allowed them to look into their patients, identify where there were problems, and cure them. This use of X-rays brought new understandings and methods for diagnosis and treatment.
- (6) Different technological devices have made it possible to observe things that we could not see with the naked eye. This has significantly altered our understandings of the world around us. Each technological

advance changes us in unpredictable ways, and each discovery increases our knowledge about the world. Just as the devices mentioned above have done, new devices will continue to impact our lives and change our ways of thinking in the future.

A 次の問い(問 1~5)の 46~50 に入れるのに最も適当なものを、それぞれ下の①~④のうちから一つずつ選べ。

問 1 Which of the following is closest to the meaning of archaic as used in paragraph (2)? 46

- ① advanced ② contemporary ③ ordinary ④ primitive

問 2 According to paragraph (3), what did people learn by using microscopes? 47

- ① Cells were too small to be seen with microscopes.
 ② Materials were made up of smaller things.
 ③ Molecules were the smallest components.
 ④ Sets of lenses decreased the size of items.

問 3 According to paragraph (4), what do cameras enable us to do? 48

- ① To capture moments in time accurately
 ② To compare rapid social changes
 ③ To make invisible things move faster
 ④ To predict what will happen

問 4 According to paragraph (5), how are X-rays used? 49

- ① To find the locations of problems in the body
 ② To improve visibility of objects' surfaces
 ③ To learn when paintings were created
 ④ To test the quality of chemical compounds

問 5 What is the main idea of this passage? 50

- ① Applications of two lenses can improve people's sight.
 ② Development of technology affects our ways of thinking.
 ③ People need to be aware of the dangers of technology.
 ④ Technology plays a vital role in changing our five senses.

B 次の表は、本文のパラグラフ(段落)の構成と内容をまとめたものである。51~54 に入れるのに最も適当なものを、下の①~④のうちから一つずつ選び、表を完成させよ。ただし、同じものを繰り返し選んではいけない。

Paragraph	Content
(1)	Introduction
(2)	51
(3)	52
(4)	53
(5)	54
(6)	Conclusion

- ① Examining the interiors of things
 ② Exploring the universe of small things
 ③ Looking at instants during a series of changes
 ④ The use of lenses to look out into space

解説

問 1 Which of the following is closest to the meaning of archaic as used in paragraph (2)? 46

「段落(2)で使われている archaic の意味に最も近いのは以下のうちどれですか？」

- ① advanced ② contemporary ③ ordinary ④ primitive
「進歩した」 「現代の」 「通常の」 「原始的な」

「最初のシンプルな」望遠鏡

(2) In the 17th century, a scientist noticed that by holding two lenses together in a certain way he could make an object appear larger. He used this technique to construct the first simple telescope. Using these archaic telescopes, early scientists were able to describe the surface of the Moon in detail and to see that Jupiter had at least four such satellites. Since that time, people have developed various devices that expand our range of sight, thus revealing facts about the universe that lies beyond the Earth. The telescope continues to offer us new views concerning things beyond our immediate reach.

17世紀に、ある科学者が、2枚のレンズをある方法で組み合わせることによって物体をより大きく見えるようにできることに気づいた。彼はこの技術を使って、最初のシンプルな望遠鏡を作った。この原始的な望遠鏡を使って、初期の科学者たちは月の表面を詳しく記述したり、木星にはこのような衛星が少なくとも4つあることを確かめたりすることができた。その時から、人々は我々の視界を広げるさまざまな機器を開発し、それによって、地球のかなたにある宇宙に関する事実を明らかにしてきた。望遠鏡は今でも、我々が直接見ることができない遠くのものに関する新たな視野を提供し続けている。

問 2 According to paragraph (3), what did people learn by using microscopes? 47

「段落(3)によれば、顕微鏡を使うことによって人々が知ったことは何ですか？」

- ① Cells were too small to be seen with microscopes.
「細胞は小さすぎて顕微鏡では見えない(こと)」
- ② Materials were made up of smaller things.
「物質がさらに小さなもので構成されている(こと)」
- ③ Molecules were the smallest components.
「分子が最小の構成要素である(こと)」
- ④ Sets of lenses decreased the size of items.
「組み合わせたレンズによっては物の大きさが小さくなる(こと)」

(3) Later, the microscope was developed using principles similar to the telescope. The microscope allows us to study objects we normally cannot see because they are too small. Looking through a microscope opened up an entirely new world to scientists. Before the invention of the microscope, they couldn't see the structures of human tissues or cells in plants and animals. When they saw these things, they became aware that some things that they had thought were whole and could not be divided, actually consisted of smaller components. These were only visible with the assistance of microscopes. Today, electron microscopes allow us to investigate even smaller items, such as molecules. These advances have altered our concepts regarding the composition of things in the world.

後に、望遠鏡に似た原理を使って顕微鏡が開発された。顕微鏡によって我々は小さすぎて通常は目で見えないものを研究することができる。顕微鏡を覗くことで科学者には全く新しい世界が開けた。顕微鏡が発明される前、彼らは人間の組織の構造や、動植物の細胞を見ることはできなかった。これらのものを見たとき、彼らは、それ以上分けられない統一体と考えていたものの中に、実はさらに小さな構成要素から成るものがあることに気づいた。これらは顕微鏡の助けを借りなければ見えなかった。今日では、電子顕微鏡によって我々は、分子のようなさらに小さなものを調べることができる。このような進歩によって世界の物質の構成に関する我々の概念が変わった。

問3 According to paragraph (4), what do cameras enable us to do? 48

「段落(4)によれば、カメラのおかげで我々ができることは何ですか？」

① To capture moments in time accurately

「正確に瞬間的な時間を捉える（切り取る）こと」

② To compare rapid social changes

「急速な社会変化を比較すること」

③ To make invisible things move faster

「目に見えないものを速く動かすこと」

④ To predict what will happen

「何が起きるかを予測すること」

(4) The invention of the camera also made the invisible world visible. In the world, everything is changing. Some things change faster than we can see. The camera is a tool that gives us the power to freeze change at different points in time. Series of pictures have revealed how birds move in flight and athletes run. The camera can also help us see changes that are so gradual that we usually don't notice them. For example, by comparing photos of the same scene taken months or years apart, we can gain insights into how societies change. There are many other ways besides these in which the camera has changed our perceptions of the world.

カメラの発明によっても、目に見えない世界が見えるようになった。世界では、あらゆるものが変化している。我々に見えないほど速く変化するものもある。カメラはさまざまな瞬間における変化している様子を静止画にする力を与えてくれる道具である。連続写真によって、鳥が飛んでいるときにどのように動いているか、アスリートがどのように走るかが明らかになった。さらにはカメラのおかげで、通常は気づかないほど非常にゆっくりした変化を目で見ることができる。たとえば、何か月、あるいは何年か時間をおいて撮られた同じ場面の写真を比較することによって、社会がどのように変化するかについての見識を得ることができる。これら以外にカメラによって世界に対する我々の認識が変化したことは、他にもたくさんある。

問 4 According to paragraph (5), how are X-rays used? 49

「段落(5)によれば、X線はどのようなことに使われていますか？」

① To find the locations of problems in the body

「体内の問題箇所を見つけること」

② To improve visibility of objects' surfaces

「物体の表面をはっきり見えるようにすること」

③ To learn when paintings were created

「いつ絵画が描かれたのかを知ること」

④ To test the quality of chemical compounds

「化合物の性質を分析すること」

(5) In the late 19th century, machines that used the newly discovered X-rays revolutionized the way in which we looked at things. Rather than seeing only the surface of an object, we gained the ability to look into it or through it, bringing the inner elements of many things into our range of view. This capability proved practical in the workplace, useful in laboratories and museums, and instructive in universities. One of the most important applications was in medicine. Doctors often had difficulty diagnosing illnesses or finding problems inside the body. X-rays allowed them to look into their patients, identify where there were problems, and cure them. This use of X-rays brought new understandings and methods for diagnosis and treatment.

19世紀後半には、新たに発見されたX線を使った機械によって、我々のものの見方が大きく進歩した。我々は物体の表面だけを見るのではなくて、その中を見たり、その背後にあるものを見たりする能力を獲得し、多くの物体の内部の要素が我々の視界に入るようになった。この能力は職場では実用的で、実験室や博物館では有用で、大学では教育的であることがわかった。その最も重要な利用法の1つは医学にあった。医師たちは病気を診断したり、体内の問題箇所を見つけたりするのに苦勞することが多かった。X線のおかげで彼らは患者の体内を見て、問題箇所がどこにあるのかを特定して、治療することができるようになった。X線のこうした使い方によって、診断と治療に、新たな理解と手法が生まれた。

→正解は①。

その他)

(1) History teaches us that technology and associated discoveries have changed how we understand the world. Many technological devices provide additional range and power to our natural capacities, such as our five senses. Among these devices, many enable us to see things that we cannot see with the naked eye. This change from invisible to visible has led to tremendous growth in our comprehension of the world and has strongly influenced our ways of thinking.

科学技術とそれに関連した発見によって、我々の世界観が変わってきたことを歴史は教えてくれる。多くの科学技術機器によって、我々の五感のような、持って生まれた能力が及ぶ範囲とその力が高まる。こうした機器の中の多くのものによって、我々は肉眼で見えないものが見える。見えないものから見えるものへのこうした変化によって、世界に対する我々の理解は大きく深まり、我々のものの考え方が強い影響を受けた。

(6) Different technological devices have made it possible to observe things that we could not see with the naked eye. This has significantly altered our understandings of the world around us. Each technological advance changes us in unpredictable ways, and each discovery increases our knowledge about the world. Just as the devices mentioned above have done, new devices will continue to impact our lives and change our ways of thinking in the future.

さまざまな科学技術機器のおかげで、我々の肉眼では見えなかったものを観察できるようになった。これによって、周りの世界に対する我々の理解が大きく変化した。個々の技術進歩は予測不能な形で我々を変え、個々の発見は世界に対する我々の理解を高めてくれる。上記の機器がしてきたように、新たな機器は今後も、我々の生活に影響を与え、我々のものの考え方を変えるであろう。

B

Paragraph	Content
(1)	Introduction
(2)	51
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- ① Examining the interiors of things
物体の内部を調べること
- ② Exploring the universe of small things
小さなものの世界を調べること
- ③ Looking at instants during a series of changes
一連の変化の中の一瞬を見ること
- ④ The use of lenses to look out into space
宇宙を見るためにレンズを使うこと

問 5 What is the main idea of this passage?

「この文章の主題は何ですか？」

- ① Applications of two lenses can improve people's sight.
「2枚のレンズを使うと人々の視力を改善できる(こと)」
- ② Development of technology affects our ways of thinking.
「科学技術の発展が我々のものの考え方に影響する(こと)」
- ③ People need to be aware of the dangers of technology.
「人々は科学技術の危険性について認識する必要がある(こと)」
- ④ Technology plays a vital role in changing our five senses.
「科学技術は我々の五感を変えるのに大きな役割を果たす(こと)」