五、閱讀測驗（占 24 分）

說明：第35題至第46題為單選題，每題2分。

第 35 至 38 題為題組

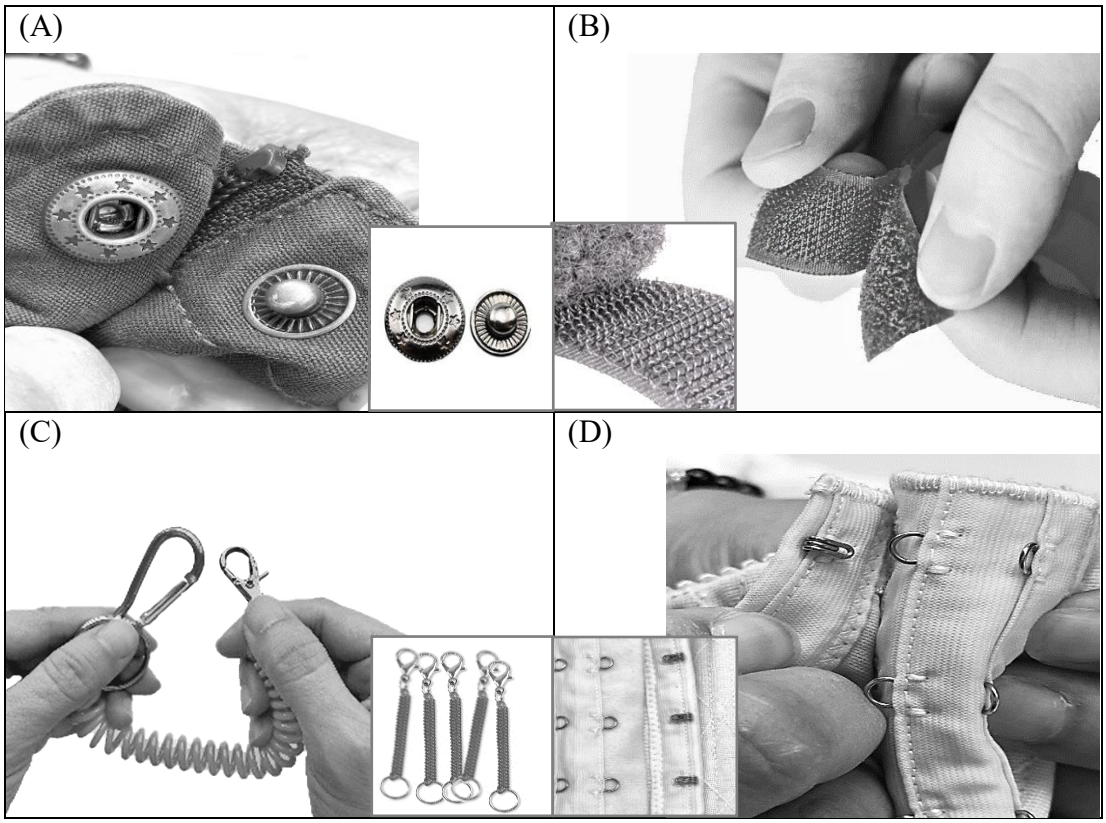
One fine morning in 1941, Swiss engineer George de Mestral went for a walk in the woods with his dog. Upon their return home, he found a lot of burrs (from plants) stuck to the dog's fur and his pants. He immediately rushed to his microscope and examined the burrs attached on his pants—feeling **a lightbulb moment** coming on.

Upon closer examination, de Mestral observed that the burrs, which appeared straight to the naked eye, actually contained many small hooks that clung firmly to the loops in the fabric of his pants. He determined that if he could recreate the same thing, making hooks-and-loops that bind to each other firmly, he could produce a strong fastener with many uses.

De Mestral's first challenge was finding a fabric for a strong bonding system. He first tried cotton, but it proved too soft and could not withstand repeated openings and closures. After years of research and testing, he learned that synthetics worked best and eventually settled on heat-treated nylon, a strong and durable substance. By 1955, he had completed an improved version of the product, with each square inch of material containing 300 hooks, which made it stay fastened and yet easy enough to pull apart when needed. Named "Velcro," from the French words *velours* (velvet) and *crochet* (hook), the new product received a patent from the Swiss government in 1955. De Mestral thus began mass-producing Velcro, opening plants in Europe and eventually into Canada and the United States.

Initially Velcro did not fare well. As most fashion critics considered it ugly and cheap-looking, the use of Velcro was limited to athletic equipment. In the early 1960s, the product received a huge boost in popularity when NASA began using it in a lot of equipment that went into space along with astronauts. Today, de Mestral's design is found almost everywhere: clothing and footwear, toys, airline seat cushions, blood pressure cuffs and surgeons' gowns. Most impressively, the magical fastener was used in the first human artificial heart transplantation to hold together parts of the device.

35. Which of the following pictures shows de Mestral's invention?



36. What does the author mean by "**a lightbulb moment**" in the first paragraph?
(A) A blessing in disguise.
(B) A happy ending.
(C) An unpredictable future.
(D) A sudden inspiration.

37. Which of the following statements about Velcro is true?
(A) It has been a market favorite since its first appearance.
(B) Cotton was not durable enough to be used as its materials.
(C) It was given a French name because it was first produced in France.
(D) The design was intended to look as shiny and smooth as velvet.

38. Which of the following fields is **NOT** mentioned for Velcro uses in the passage?
(A) Civil engineering.
(B) Aerospace industry.
(C) Medical technology.
(D) Sports and recreation.

第 39 至 42 題為題組

Thomas Moran, a famous painter in the 19th century, played an important role in the establishment of American national parks. His vivid paintings brought the splendor of the extraordinary landscapes before the eyes of American people, thus setting the stage for the regions to be widely recognized and officially established as national parks.

Moran came to the United States at age 7 with his family and settled in Philadelphia. They came from northwest England, **the blackened heart** of the Industrial Revolution: Its main street was "a dark, unattractive hole" and the river running through it was a string of dirty water. That was all the nature that Moran knew. Moran began painting by age 15, inspired by the landscape paintings of the British master J.M.W. Turner. There was plenty of landscape for him to paint in America, much different from his hometown. Showing great talent in painting, Moran was soon hired as an illustrator at *Scribner's Monthly*, and later appointed chief illustrator by age 34. In 1871, he was appointed to illustrate *The Wonders of Yellowstone,* a story by Nathaniel P. Langford, who had participated in an expedition to Yellowstone. Captivated by the utterly fantastic sights Langford described, Moran became eager to see this odd territory for himself.

In 1871 Moran joined the first US government survey of the Yellowstone region with photographer William Henry Jackson. For two weeks he filled his sketchbook with the landscape's most stunning sights. Moran's watercolors—the first color renderings of the area—as well as Jackson's photos and the survey results were presented to the Congress. His powerful images of Yellowstone fired the imagination of Congress members. In March 1872, lawmakers officially made Yellowstone a national park, the world's first.

Before Moran arrived, Yellowstone in the popular imagination was a harsh, wild place with hot water and steam coming out of hellish holes in the ground. Since the painter's work appeared, Yellowstone National Park has come to be known as a picturesque wonderland. By the time Moran died, he had painted a dozen other areas that would become national parks or monuments.

39. What can we learn from the passage?
(A) How national parks around the world were established.
(B) How Yellowstone's natural features were formed.
(C) Why Moran's family moved to the United States.
(D) Why Moran started painting Yellowstone.

40. Why does the author use "**the blackened heart**" in paragraph 2 to describe Moran's hometown?
(A) The place was severely polluted.
(B) The town was filled with darkened holes.
(C) There were many evil-hearted industry owners.
(D) The laborers mostly wore dark and dirty uniforms.

41. Which of the following statements is true about the Yellowstone National Park?
(A) Its establishment was proposed by Langford.
(B) Americans knew little about its beauty before the 1870s.
(C) The government project was started due to its rich natural resources.
(D) It was the only national park established because of Moran's works.

42. What can be inferred from the passage?
(A) *Scribner's Monthly* was a magazine promoting national parks.
(B) Moran had visited Yellowstone before he started painting its landscapes.
(C) Color photos were not common when Moran started painting Yellowstone.
(D) Watercolor was the most popular form of landscape painting in the 19th century.

第 43 至 46 題為題組

In 2020, Petur Oddsson, a power station worker in Iceland, was struck by a 60,000-volt current. The electrical shock burned almost half of his body and melted layers of his skin off. Such deep and extensive burns can be fatal. But Oddsson's life was saved by a creative invention: transplanting codfish skins onto human bodies.

A triumph for medical technology, Oddsson's fish skin transplantation was actually part of the astonishing achievement of "100% Fish," an ambitious task in promoting environmental efficiency. The Icelandic project, from which **this pioneering procedure** emerged, strives for making a fundamental change in the marine industry. It aims to encourage full utilization of each fish caught, and to strengthen innovation in seafood products.

Reducing waste of fish catch has become a serious issue today, when many countries are faced with food crises. According to a 2003 study, about 60% of a codfish caught in Iceland was lost or wasted during the production process for human consumption. Under the guidance of 100% Fish, however, Icelanders are now using almost 95% of a cod. Cod skin, for example, is made into calcium supplement and energy drinks, and even as material for skin transplantation as in Oddsson's case. Dried fish heads and spines are exported to West Africa, where they are used as the base of a protein-rich soup. Other groundbreaking products, including Omega-3 capsules, cold virus pretreatment sprays, and dog snacks are made from what was once cod catch detritus.

The Icelandic success is accomplished largely through cooperative efforts across various industries. 100% Fish takes the initiative to show seafood companies the importance of collaboration, and facilitate valuable connections between fishing companies and other participants of the project, including academia, start-ups, and research and development teams. By sharing knowledge and information, the different sectors are able to come up with improved processing and handling, through which creation of various innovative products was made possible. The project not only helps Icelanders to get 30% more value from each cod than most developed countries, but also provides an effective model to promote resource efficiency worldwide.

43. What is the primary goal of 100% Fish?
(A) To advance ocean technology.
(B) To reduce food crises worldwide.
(C) To enhance cross-industry cooperation.
(D) To make the most of marine resources.

44. What does "**this pioneering procedure**" in the second paragraph refer to?
(A) 100% Fish's mission.
(B) Oddsson's skin transplant.
(C) A fundamental change in seafood business.
(D) A new approach to protect the environment.

45. Which of the following is true according to the passage?
(A) Iceland has increased their fish catch by 30% in the last 20 years.
(B) Petur Oddsson was an important member of the Icelandic project.
(C) Cross-field collaboration has proved to be very fruitful for 100% Fish.
(D) 100% Fish is a big international enterprise marketing seafood products.

46. Here is a sentence: "**Almost nothing of a fish is left for the trash bin.**"
Which paragraph is most suitable to have it as the final sentence?
(A) Paragraph 1.
(B) Paragraph 2.
(C) Paragraph 3.
(D) Paragraph 4.