

外国語(英語) (2023)

- (注意事項)
- 1 問題文は14ページあります。
 - 2 解答は解答用紙の所定欄に記入してください。下書きは、問題冊子の余白を利用してください。ただし、回収はしませんので採点の対象とはなりません。
 - 3 解答は一部記述を含むマークセンス方式となっていますので、解答用紙の注意事項をよく読み解答してください。
 - 4 受験番号・氏名・フリガナは、監督者の指示に従って、解答用紙の所定欄に丁寧に記入してください。
 - 5 解答用紙にマークセンス方式の受験番号欄があります。受験番号をマークする際は濃く丁寧にぬってください。
 - 6 試験中に問題冊子の印刷不鮮明、ページ落丁・乱丁及び解答用紙の汚れなどに気づいた場合は、手を挙げて監督者に知らせてください。

I 以下の英文を読み、マーク記入式設問1～6と記述式設問Iに答えなさい。本文中の丸数字①～⑧は段落番号を表す。

① For much of our history, the planet Mars has represented death and chaos. To the ancient Greeks and Romans, Mars was the god of war, the destroyer. People in early civilizations all over the world looked skyward to that rust-colored point in the sky and trembled. What is it about Mars that frightened them? Even today, when “space invaders” are mentioned, we think ^(1-A)() Martians. Invaders from Pluto or Venus just don’t seem to terrify us as much. But mention Martians, and you stop a moment, eyes widening maybe just a bit, before you chuckle ^(2-A)() and move on.

② Maybe it’s because Mars appears so similar to our own Earth. Both planets have polar ice caps, seasons, and a 24-hour day. It’s natural to think there might be some sort of life on Mars. Yet, ancient civilizations knew none of this—to them, Mars was a red-colored point of light in the sky. Why were they so scared?

③ Mars is part of our culture, our mythology. It has been for thousands of years. Today, in our scientific world, we think everything can be explained. If there’s a mystery, we experiment. We analyze the contents of a test tube or peer through a powerful telescope until the problem is solved. But it wasn’t always so.

④ Before the age of science, people still searched for answers to the riddles of nature and human behavior. They turned to myths. The Latin origin of the word myth is *mythos*, a story. Myths give life to society’s hopes, dreams, and fears.

⑤ Even today, in our scientific society, myths are everywhere. They’re often hidden. In *The Power of Myth*, author Joseph Campbell said mythology is “the song of the universe.” Myths help us understand characters—called *archetypes—such as heroes, *villains, shapeshifters, and *tricksters.

⑥ But what about Mars? How did ^(3-A)()? Why is Mars so frightening? The explanation is there for everyone to see. Go outside on a clear night and gaze upwards. The answer is in the stars.

⑦ Thousands of years ago, astronomers observed the stars in an effort to understand our place in the universe. The movement of the heavens was reassuringly predictable. The stars always rose in the east and set in the west, just like the Sun and Moon. Stars were arranged in patterns that resembled creatures and objects. We call them *constellations today.

⑧ The positions of the stars shifted as the seasons changed, but relative to each other,

the patterns stayed the same. Sometimes strange lights would flash across the horizon (meteorites), or bright balls with *eerie glowing tails hung in the sky for many nights (comets). But these events came and went. Always, the stars remained.

⑨ The Greek words meaning “law of the stars” gave us the word astronomy. With the right record keeping, the sky can be used like a calendar.

⑩ (1-B) (_____) tracking the predictable star patterns, early astronomers helped people choose the best time to plant and harvest crops, or decide when seasonal herds of animals would pass through their lands. In fact, every advanced civilization of the past, from China to Central America, developed some sort of astronomical knowledge. Most also had religious beliefs connected to their understanding of the heavens.

⑪ Many civilizations invented devices, or built structures, to help their astronomers track the stars. In Egypt, the Great Pyramid of Giza is aligned to the polestar (Polaris, the North Star). Seasons are tracked by the position of the pyramid’s shadow. A temple built by the ancient Anasazi people in Chaco Canyon, New Mexico, has a window through which a shaft of sunlight enters and covers a special spot on the opposite wall only on June 21, the summer solstice (the longest day of the year). Stonehenge, a circular formation of huge stone slabs in England, was built about 4,500 years ago. It (2-B) (_____) predicted the positions of the Sun and Moon, and the changing seasons.

⑫ The Sumerians, the Babylonians, Egyptians, as well as the Mayans and Aztecs of Central America, all developed accurate calendars and almanacs based on the regular movement of the stars. Navigation aids were also invented that relied on predictable star patterns.

⑬ However, five lights in the night sky acted (2-C) (_____). Today, we know that these are the five planets that can be seen without a telescope: Mercury, Venus, Mars, Jupiter, and Saturn. To ancient people, these “stars” wandered through the sky. One night a star might be near the constellation of *Scorpius, but a few weeks later shift positions to Sagittarius or Capricornus. (In fact, the word comes from the Greek *planetes*, which means “wanderers.”) Sometimes, these strange lights even moved backward for a short time, or looped, before continuing their eastward movement through the string of constellations (the zodiac). Astronomers call this backward movement *retrograde motion*.

⑭ Predictable things make us feel safe, like we’re in control. We grow fearful when an unpredictable event happens. When ancient astronomers saw wandering stars, they were naturally filled (1-C) (_____) dread. Maybe some sort of disaster was looming.

(*Disaster* is a Greek word meaning “bad star.”) Astronomers could track the planets through the night sky, but they couldn’t explain their complicated movements.

⑮ When there is a gap between our understanding and the way things are, myth fills the space. That is why we gave the planets human *traits. It was ^(3-B)(_____). The planets became supernatural—they were gods that lived in the heavens.

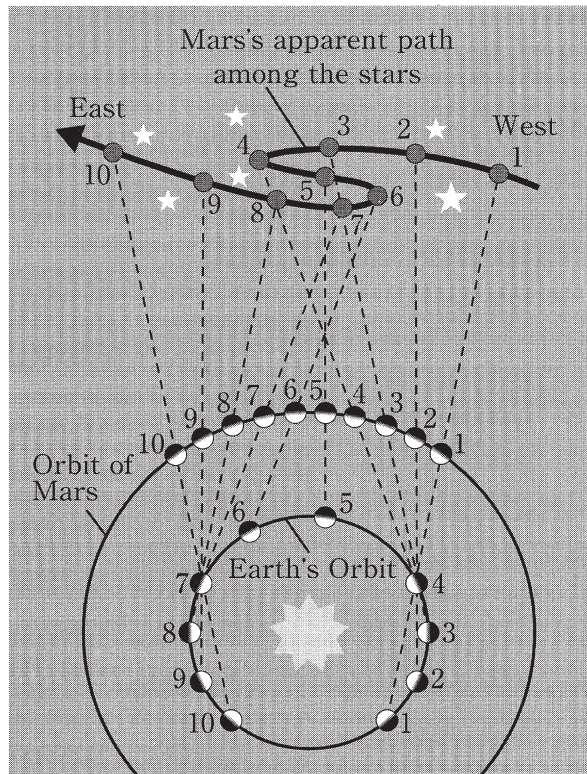
⑯ There was one planet that troubled astronomers most of all. Its light never flickered like a star, and it glowed an ominous red color. Its movement through the sky was the most *erratic of the planets. It was the least predictable, and the most frightening. That planet was Mars, the god of war.

⑰ About 3,000 years ago, the ancient Greeks believed ^(1-D)(_____) many gods. The 12 Olympians were the most powerful. They were the controllers of natural forces such as the wind, the oceans, and earthquakes. The five known planets were each named after different gods, depending on how they moved in the heavens. For example, Mercury, having the swiftest path through the zodiac, was named after Hermes, the quick messenger of the gods. Mars was named Ares, the god of war, because of its unpredictable, unusual motion. Later, during the ancient Roman period, the planet was called as we know it today—Mars.

⑱ Much of ancient Greek culture was passed down to modern Western civilization. Like the ancient Greeks, today we value reason and logic, fairness, and a curiosity of the natural world. The opposite of the Greek ideal is war—fighting, murder, and disorder. Mars the planet represented all these bad traits as Ares, the god of war.

⑲ Greek *cults sprang up in which Ares was worshipped, especially in the *city-state of Sparta. Later, in ancient Rome, Ares became known as Mars. The cult of Mars became even stronger, ^(3-C)(_____). Ancient Rome was a conquering society, where war and conflict were common. ⁽⁴⁾And as the Romans invaded other lands, so spread the cult of Mars.

⑳ Myths are powerful forces in civilizations. They teach us how to behave in society or how not to behave. Our myths are passed down from generation to generation until their messages are assumed to be “the truth.” We believe them without question. That’s why, even to this day, when we think of Mars, we think of negative things that our society fears and hates. Because of our Greek heritage, Mars will always be looked on with suspicion and fear.



This chart shows the retrograde motion of Mars. Because Earth moves faster around the Sun, Mars appears to backtrack (points 4, 5, and 6) before resuming its west-to-east movement through the zodiac.

[Adapted from Hamilton, John C. (2019). *Mission: Mars: The Thrilling History of the Red Planet* (Destination Outer Space Book 2). Kindle edition.]

- 注 *archetype = 典型 *villain = 悪党 *trickster = 詐欺師
 *constellation = 星座 *eerie = 不気味な *Scorpius = さそり座
 *trait = 特徴 *erratic = 不安定な *cult = 崇拜
 *city-state = 都市国家

マーク記入式設問

1. 本文中の下線部(1-A) (本文①段落目), (1-B) (本文⑩段落目), (1-C) (本文⑭段落目), (1-D) (本文⑰段落目) の空所に入れるべき最も適切な前置詞を, 次の a ~ d から選びなさい。ただし, 文の先頭の語も小文字で示されていて, 各選択肢は一度しか使えない。

- a. with b. by c. in d. of

2. 本文中の下線部 (2-A) (本文①段落目), (2-B) (本文⑩段落目), (2-C) (本文⑬段落目) の空所に入れるべき最も適切な副詞を, 次の a ~ c から選びなさい。各選択肢は一度しか使えない。

- a. strangely b. nervously c. accurately

3. 本文中の下線部 (3-A) (本文⑥段落目), (3-B) (本文⑮段落目), (3-C) (本文⑲段落目) について, 以下に示す語句を並べ替えて空所に入れるべき文を完成させたい。並べ替えた後に 4 番目に配置される語句の記号をそれぞれ 1 つ選びマークしなさい。

- (3-A) a. death and destruction b. to c. symbolize
d. come e. the Mars myth

- (3-B) a. the unexplainable b. to c. of
d. make e. an attempt f. sense

- (3-C) a. believing b. with c. Mars
d. that e. Roman citizens f. was
g. their protector

4. 本文中の下線部(4) (本文⑲段落目) 中にある as ~, so と最も近い意味で as ~, so を用いている文を a ~ e より 1 つ選びマークしなさい。

- a. I did not think of him as being so old.
b. It started as a hobby, so there was no pressure.
c. As demand grew, so did profits.
d. Walk as slow as possible, so you don't miss the scenery.
e. As is so often the case with women, she is curious.

5. 本文の内容と一致するように次の(5-A), (5-B), (5-C), (5-D)の空所に入れるべき最も適切な単語を, それぞれ次の a ~ dの中から1つ選びマークしなさい。

(5-A) Mars is very similar to () in that both have polar ice caps and seasons.

- a. Mercury b. Earth c. Jupiter d. Venus

(5-B) () are useful to explain something that people could not explain in ancient times.

- a. Religions b. Mars c. Myths d. Constellations

(5-C) If we meet something that has not yet been explained today, we will do ().

- a. calculations b. discussions c. meditations d. experiments

(5-D) The “stars” which seemed to move unusually for the ancient Greeks are called () today.

- a. satellites b. planets c. heavens d. constellations

6. 本文の内容と一致するものを次の a ~ gの中から2つ選び, 1つの解答欄に1つずつマークしなさい。解答欄にマークする正答の順序は問わないが, 1つの解答欄に2つ以上マークすると減点の対象となる。

- a. When we hear the word “space invaders,” we imagine those from Pluto and Venus as well as Mars.
- b. All ancient civilizations had very accurate calendars by observing movements of the stars.
- c. Something that changes suddenly without reason tends to terrify us.
- d. Mars is a red and winking star.
- e. Modern people appreciate logic and reason but the ancient Greeks did not.
- f. The word “planet” derives from an ancient Greek word meaning “wanderers.”
- g. The ancient Greeks feared Mars because of its swift motion.

記述式設問

I. 本文の内容と一致する英文となるように下の文の空所部分に最も適切な英単語を記述式解答欄 I に記入しなさい。

The () predictably a star moves, the () uneasy it makes us.

II 以下の英文は、質量と重量についての解説である。この英文を読み、マーク記入式設問1～4と記述式設問II-1およびII-2に答えなさい。本文中の丸数字①～⑬は段落番号を表す。

How do mass and weight differ?

① In everyday life, we often use the words “mass” and “weight” as if they’re the same. But in science, it’s important to be precise. Mass and weight are both measurements that describe heaviness, but they actually mean very different things. Let’s be specific!

② Mass is a measurement of the amount of matter in some object. It depends only on what type of atoms the object is made _(1-A) (_____), and how many atoms there are. Mass is traditionally measured in kilograms (kg). A pineapple or a wooden baseball bat each have a mass of about 1 kilogram.

③ If you were to measure _(1-B) (_____) 1 kilogram of steel and 1 kilogram of feathers, they would each have the same mass. But their volumes would differ. You’d need a far bigger volume of feathers because most of the elements they’re made from are lighter than those in steel. It takes more of those ₍₂₎ atoms to build up the same mass—which takes up more space.

④ People in the United States rarely describe objects using kilograms in daily life. Scientists and doctors use this term because it is the standard unit of mass in *the metric system. (A standard unit is a definition that all scientists agree on.)

⑤ You can change an object’s mass by removing some of its parts. When you take books out of your backpack at the end of a school day, you’ve decreased the backpack’s mass. Mass can also change by adding more matter. When a child grows, their body is building longer bones and bigger organs. The child’s mass will increase because they are transforming food energy into matter for their body.

⑥ It’s important to know that mass doesn’t change by varying its shape, location or size. Your body’s mass is the same when you’re curled _(1-C) (_____) on the sofa or when you stretch as high as you can. And it’s the same when you’re at home or at the beach or at school! But your mass is a little bit more after you’ve eaten breakfast, compared

(1-D) () when you first wake up in the morning. Mass is a fundamental measurement of how much matter an object contains.

⑦ Weight is a measurement of the *gravitational force on an object. It not only depends on the object's mass, but also on its location. Therefore, weight is actually a measure of force. In the United States, most people measure weight in pounds. Let's say that your body has a mass of 40 kilograms. Your mass is 40 kilograms on Earth, on the moon, on Jupiter—and even floating inside the International Space Station. Your mass is 40 kilograms (). But your weight differs from place to place because of differences in how hard gravity at each site pulls on you. On Earth's surface, 1 kilogram of mass is equivalent (1-E) () 2.2 pounds of weight. So your 40-kilogram mass on Earth would weigh 40×2.2 —or 88 pounds.

⑧ Language can get tricky here. Scientifically, you shouldn't say, "My doctor measured my weight (1-F) () 40 kilograms," because weight isn't the same as mass. It would be similarly incorrect to say, "My doctor measured my mass (1-F) () 88 pounds." However, since we all experience the same strength of Earth's gravity on our mass, in casual language we often use mass and weight *interchangeably. In much the same way, most people feel comfortable describing mass in pounds and weight in kilograms.

⑨ To avoid this confusion, scientists use a standard unit for force. It's called the newton (in honor of Isaac Newton). On Earth, 100 newtons of weight (a force) is equal to about 22 pounds. This is a measure of how hard Earth's gravity pulls on a mass of about 10 kilograms.

Mass and weight are proportional

⑩ As the mass of something rises or falls, its weight will change in the same way. And if the gravitational force on something rises or falls, its weight will also. In short, the mass of something rarely changes, but there are multiple ways its weight can change.

⑪ The gravity you'd feel on the surface of a planet depends on its density. We say that Earth has the gravitational force of one "G." The moon is much smaller and less dense than Earth. Its gravity is one-sixth G. Although Jupiter is much, much bigger than

Earth, it's not very dense. So Jupiter's gravity is 2.5 G.

⑫ If your mass is 40 kilograms on Earth, your 88-pound weight would drop to (3-A) (_____) pounds on the moon. On Jupiter, you'd weigh (3-B) (_____) pounds. On the International Space Station, floating in orbit, your weight would be zero. But your mass would stay the same—40 kg—in all of these places. For that reason, mass is a fundamental property of matter and weight is not.

⑬ Rocket launches offer an interesting example of how mass and weight relate. At launch, the rocket is full of fuel, so its mass is greatest. At Earth's surface, it also feels the maximum pull of gravity, so its weight is heaviest. A few minutes after launch, the rocket has burned through a huge portion of its fuel. This means it has lost mass as that fuel has been transformed into energy. In addition, the rocket is farther from Earth's surface. Gravity therefore pulls on it with even less force. Both the rocket's mass and its weight have dropped. The rocket's engines can now push the rocket even faster than they could at launch.

[Adapted from "How do mass and weight differ?", *Science News Explores*, Trisha Muro, <https://www.snexplores.org/article/explainer-how-do-mass-and-weight-differ>, Retrieved on June 27th, 2022.]

注 *the metric system = メートル法 *gravitational = 重力の

*interchangeably = 互換性を持って

マーク記入式設問

1. 本文中の下線部(1-A) (本文②段落目), (1-B) (本文③段落目), (1-C) (本文⑥段落目), (1-D) (本文⑥段落目), (1-E) (本文⑦段落目), (1-F) (本文⑧段落目に2箇所)の空所に入れるべき最も適切なものを, それぞれ次の a~d の中から1つ選びマークしなさい。

- | | | | | |
|-------|---------|----------|-----------|----------|
| (1-A) | a. by | b. for | c. in | d. of |
| (1-B) | a. for | b. in | c. out | d. over |
| (1-C) | a. away | b. above | c. beyond | d. up |
| (1-D) | a. at | b. by | c. of | d. with |
| (1-E) | a. at | b. to | c. over | d. up to |
| (1-F) | a. as | b. for | c. in | d. on |

2. 本文中の下線部(2)those (本文③段落目) が指しているものを, 次の a~d の中から1つ選びマークしなさい。

- | | | | |
|------------|---------|------------|-------------|
| a. objects | b. mass | c. volumes | d. elements |
|------------|---------|------------|-------------|

3. 本文中の下線部(3-A) (本文⑫段落目) と下線部(3-B) (本文⑫段落目) にはそれぞれ数値が入る。本文の説明に合った(3-A) (3-B)の順の数値の組合せで最も近いものを, 次の a~e の中から1つ選びマークしなさい。

- | |
|-----------|
| a. 40 40 |
| b. 88 88 |
| c. 15 100 |
| d. 15 220 |
| e. 37 220 |

4. 本文の内容と一致するものを次の a～f の中から 2 つ選び、1 つの解答欄に 1 つずつマークしなさい。解答欄にマークする正答の順序は問わないが、1 つの解答欄に 2 つ以上マークすると減点の対象となる。

- a. If the number of atoms that make up an object is the same, the mass is the same.
- b. People in the United States usually use the kilogram as a unit for the weight of an object.
- c. Weight is affected by gravity, but mass is not.
- d. A rocket is faster at launch than it is after consuming fuel.
- e. The kilogram is used as a standard unit.
- f. A person's weight never goes to zero anywhere.

記述式設問

II-1. 本文中で使われている下記の単語について、同義語として使われている単語を本文から抜き出して記述式解答欄に記入しなさい。

- a. volume (本文③段落目)
- b. place (本文⑦, ⑫段落目)
- c. rise (本文⑩段落目)
- d. fall (本文⑩段落目)

II-2. 本文中の下線部【記述式設問 II-2】(本文⑦段落目)の空欄に「あなたがどこにいても」を意味する英文を 5 個の英単語で構成し、記述式解答欄 II-2 に記入しなさい。

Ⅲ 以下は米国を中心とした一大金融企業グループである Goldman Sachs（ゴールドマン・サックス）のある同時代の二人の筆頭経営者（John Weinberg と John Whitehead）が先代の経営者である Sidney Weinberg と Gus Levy の時代の会社経営・運営方法を改革していく様子を記したものである。英文を読み，下の問題に答えなさい。

著作権の都合上、省略。

Goldman Sachs : The Culture of Success by Lisa Endlich, Pearson Education.

著作権の都合上、省略。

*partner = 共同経営者，役員

記述式設問

二人の John は先代の会社経営・運営方法に対してどういう改革を加えていったのか。先代の悪いところを挙げた部分ではなく、具体的な改革事例が挙げられている部分から3つの具体例を拾い，それぞれ解答欄のマス目の文字数以内で日本語を記入し解答欄を完成しなさい。

IV 以下はそれぞれある英単語の意味を英語で説明したものである。それぞれの空欄に示された最初の1文字で始まる英単語を記入し、単語の説明文(1)~(4)を完成しなさい。解答欄に示された最初の1文字は改めて書かなくてよい。

(1) (w) = the grain that is used to produce the flour for bread, cakes, pasta, etc., or the plant that it grows on.

(2) (s) = a system in which you pay a certain amount of money regularly (monthly, etc.) to receive a service, such as magazines or online delivery of music or movies, basically with no extra charges.

(3) (m) = a piece of special glass with a metallic coating on its back, which reflects images and can be used to look at yourself when you look into it.

(4) (s) = a solid substance, such as silicon, that allows some electric currents to pass through it in particular conditions, better than insulators but not as well as most metals. Devices made of it are essential components of most modern electronic circuits.

—問題文終り—