

# 2024 年度学校推薦型選抜試験問題

## 数 学

### 【注意事項】

- 1 係員の指示があるまで、問題冊子を開いてはいけません。
- 2 この問題冊子は、表紙を除いて8ページ、解答用紙は2枚あります。
- 3 落丁、乱丁、印刷の不鮮明な箇所などがあったときは、手を挙げて係員に申し出てください。
- 4 解答用紙には、解答欄以外に受験番号記入欄がありますので、係員の指示に従って2枚とも正しく記入してください。
- 5 解答は、解答欄にのみ記入してください。
- 6 問題冊子の余白等は適宜利用してかまいませんが、どのページも切り離してはいけません。
- 7 試験終了時刻まで退室してはいけません。
- 8 解答用紙は持ち帰ってはいけません。その他は持ち帰ってください。

1 以下の空欄をうめよ。

(1) 連立不等式

$$\begin{cases} x^2 - 6x + 5 < 0 \\ x^2 - 7x + 12 > 0 \end{cases}$$

を解くと  である。

(2)  $\vec{a} = (3, 2, 1)$  と  $x$  軸の正の向きとのなす角を  $\alpha$  とするとき、

$\cos \alpha =$   である。

(3)  $\sqrt{10}$  の小数部分を  $a$  とする。  $a^2 + \frac{1}{a^2}$  を求めると  である。

(4) 10 進法で表された 162 を  $n$  進法であらわすと  $321_{(n)}$  になるとき、

$n =$   である。

(5) 方程式  $27^x = 7 \times 3^x - 6$  の解は  $x =$   である。

(6) 等式  $f(x) = x^2 - 2x - 8 + 3 \int_0^1 f(t) dt$  を満たす関数  $f(x)$  を求めると、  $f(x) =$   である。

(計算用紙)

2 袋の中に白石と黒石が合計7個入っている。(すべてが白石またはすべてが黒石でもよい。)このとき以下の試行を考える。

- 袋から石を1個取り出し、それが白石のときは取り出した石の代わりに黒石を1個袋に入れ、黒石のときには取り出した石の代わりに白石を1個袋に入れる。

はじめに袋の中に白石が2個と黒石が5個入っているとき、この試行を3回繰り返す。以下の問いに答えよ。

(1) 1回目の試行で取り出した石が黒石である確率を求めよ。

イ

(2) 3回目の試行で取り出した石が黒石である確率を求めよ。

ロ

(3) 3回の試行で取り出した石がすべて黒石である確率を求めよ。

ハ

(4) 3回の試行のうち、少なくとも1回は白石が取り出される確率を求めよ。

ニ

(計算用紙)

3  $a, b, c$  を定数とする. 3次関数  $f(x) = 2x^3 + ax^2 + bx + c$  について, 以下の問いに答えよ.

- (1)  $f(x)$  が  $x = 0, -1$  で極値をとり,  $f(-1) = 0$  を満たすとき, 定数  $a, b, c$  の値を求めよ.

$$a = \boxed{\text{イ}}, b = \boxed{\text{ロ}}, c = \boxed{\text{ハ}}$$

- (2) (1) で得られた関数  $y = f(x)$  のグラフ  $C$  と  $x$  軸で囲まれる部分の

面積  $S$  を求めよ.  $S = \boxed{\text{ニ}}$

(計算用紙)

4 平面上に平行四辺形 OABC がある。線分 OA を 1 : 2 に内分する点を P, 線分 OC を 2 : 1 に内分する点を Q とする。線分 BQ と線分 CP の交点を X, 直線 OX と線分 BC の交点を Y とする。  $\overrightarrow{OA} = \vec{a}$ ,  $\overrightarrow{OC} = \vec{c}$  とするとき, 以下の空欄をうめよ。

(1)  $CX : XP = t : (1 - t)$  とおいて,  $\overrightarrow{OX}$  を  $\vec{a}, \vec{c}, t$  を用いて表すと,

$$\overrightarrow{OX} = \boxed{\text{イ}} \text{ である.}$$

(2)  $QX : XB = s : (1 - s)$  とおいて,  $\overrightarrow{OX}$  を  $\vec{a}, \vec{c}, s$  を用いて表すと,

$$\overrightarrow{OX} = \boxed{\text{ロ}} \text{ である.}$$

(3)  $\overrightarrow{OX}$  を  $\vec{a}, \vec{c}$  を用いて表すと,  $\overrightarrow{OX} = \boxed{\text{ハ}}$  である.

(4)  $\overrightarrow{OY}$  を  $\vec{a}, \vec{c}$  を用いて表すと,  $\overrightarrow{OY} = \boxed{\text{ニ}}$  である.

(計算用紙)

(計算用紙)



# 2024 年度学校推薦型選抜試験問題

## 英 語

### 【注意事項】

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- 4 この試験問題の解答はマーク方式になっていますので、記入の際には次のことに十分注意してください。

① HBの黒鉛筆を使用し、右のマーク例を（マーク例）  
参考にしていてねいに記入してください。

良い例	悪い例
	

- ② 訂正は、消しゴムできれいに消し、消し  
くずを残してはいけません。
- ③ 所定の欄以外にはマークしたり、記入したりしてはいけません。
- ④ 解答用紙を汚したり、折り曲げたりしてはいけません。
- 5 解答用紙には、解答欄以外に次の記入欄がありますので、係員の指示に従って、それぞれ正しく記入し、マークしてください。
  - ① 氏名欄  
氏名及びフリガナを記入してください。
  - ② 受験番号欄・受験番号マーク欄  
受験番号を左詰めで記入し、さらにその下のマーク欄にマークしてください。
  - ③ 年月日欄  
記入しないでください。
- 6 解答は、解答用紙の解答欄にマークしてください。例えば(20)と表示のある問いに対して(C)と解答する場合は、次の(例)のように問20の解答欄のCにマークしてください。正しくマークされていない場合には、採点できないことがありますので注意してください。

(例)

解答 番号	解 答 欄
(20)	(A) (B) ● (D)

- 7 問題冊子の余白等は適宜利用してかまいませんが、どのページも切り離してはいけません。
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第 1 問: 次の会話(1)~(5)のそれぞれの空欄に入る最も適切なものを、(A)~(D)の中から一つずつ選びなさい。

(1) Person A: The café across the street has the best atmosphere at lunch.  
Person B: \_\_\_\_\_

- (A) I prefer sandwiches for lunch.
- (B) I usually bring lunch from home.
- (C) Let's go to that café around the corner then.
- (D) I agree, and I also think that the food is delicious.

(2) Person A: It's time to leave now.  
Person B: \_\_\_\_\_

- (A) No. I left on my trip yesterday.
- (B) Right. Please leave them here.
- (C) Right. We had better not be late.
- (D) Yes. It's good that we left on time.

(3) Person A: Why don't we eat breakfast now?  
Person B: \_\_\_\_\_

- (A) Because I'm hungry now.
- (B) Sure, it's a busy time so let's go later.
- (C) Sure, let's go!
- (D) Because it's 8:00.

(4) Person A: \_\_\_\_\_  
Person B: In that case, let's meet on Thursday at 10:00.

- (A) Sorry, I have a meeting Thursday all morning.
- (B) Sorry, I'm only available on Friday morning.
- (C) Sure, I was free all day last Thursday.
- (D) Sure, I'm free every morning next week.

(5) Friend A: \_\_\_\_\_  
Friend B: My friend also told me that.

- (A) Are you sure you studied for the test?
- (B) Do you want to study together for the test?
- (C) I heard that this teacher gives easy tests.
- (D) Tell me your score on the test yesterday.



第 2 問: 次の英文 (6)~(15)の下線部の本文中の意味に最も近いものを、それぞれ(A)~(D)の中から一つずつ選びなさい。

- (6) The chef is passionate about using fresh, local ingredients in his dishes.
- (A) enthusiastic
  - (B) cautious
  - (C) indifferent
  - (D) detached
- (7) My leg has a cut on it.
- (A) a bandage
  - (B) a decoration
  - (C) an injury
  - (D) an insect
- (8) It was time to board the flight.
- (A) begin
  - (B) get on
  - (C) go to
  - (D) unload
- (9) She does her housework every Sunday.
- (A) shopping
  - (B) paperwork
  - (C) therapy
  - (D) cleaning
- (10) This highway does not have a speed limit.
- (A) maximum
  - (B) measure
  - (C) camera
  - (D) sign
- (11) The students were grouped by their family names.
- (A) classified
  - (B) distributed
  - (C) proceeded
  - (D) queued

(12) His words were inspirational.

- (A) enduring
- (B) motivating
- (C) respiratory
- (D) revolutionary

(13) He used a rag to clean up the mess.

- (A) cloth
- (B) mop
- (C) soap
- (D) vessel

(14) The view was remarkable.

- (A) amazing
- (B) satisfactory
- (C) improbable
- (D) substantial

(15) Trees surrounded the house.

- (A) composed
- (B) enclosed
- (C) extended
- (D) radiated

第 3 問: 次の英文(16)~(30)のそれぞれの空欄に入る最も適切なものを、(A)~(D)の中から一つずつ選びなさい。

(16) \_\_\_\_\_ saw the movie last night?

- (A) What
- (B) Which
- (C) Who
- (D) Whom

(17) I would like \_\_\_\_\_ a glass of water, please.

- (A) has
- (B) have
- (C) to had
- (D) to have

(18) I wanted to go to the concert, \_\_\_\_\_ I didn't have enough money.

- (A) at
- (B) but
- (C) or
- (D) with

(19) Are you \_\_\_\_\_ your homework?

- (A) did
- (B) do
- (C) does
- (D) doing

(20) I \_\_\_\_\_ a game when it started raining.

- (A) play
- (B) plays
- (C) was playing
- (D) will play

(21) He \_\_\_\_\_ finished the class activity yet.

- (A) didn't
- (B) has
- (C) hasn't
- (D) is

- (22) Next year, she's \_\_\_\_\_ attend university.
- (A) go to
  - (B) going to
  - (C) shall
  - (D) will
- (23) The experiment \_\_\_\_\_ with the help of the professor.
- (A) completed
  - (B) completing
  - (C) was completed
  - (D) will complete
- (24) The detective \_\_\_\_\_ the missing clue.
- (A) find
  - (B) finded
  - (C) found
  - (D) founded
- (25) Let's \_\_\_\_\_ tomorrow.
- (A) go shopping
  - (B) going to shop
  - (C) shopping
  - (D) to shop
- (26) He didn't like the movie and \_\_\_\_\_ I.
- (A) also didn't
  - (B) either did
  - (C) neither did
  - (D) too didn't
- (27) What \_\_\_\_\_ that you have in your hand?
- (A) do
  - (B) does it
  - (C) was
  - (D) is it

(28) I \_\_\_\_\_ like to join you, but I'm busy tomorrow.

- (A) could
- (B) will
- (C) would
- (D) wouldn't

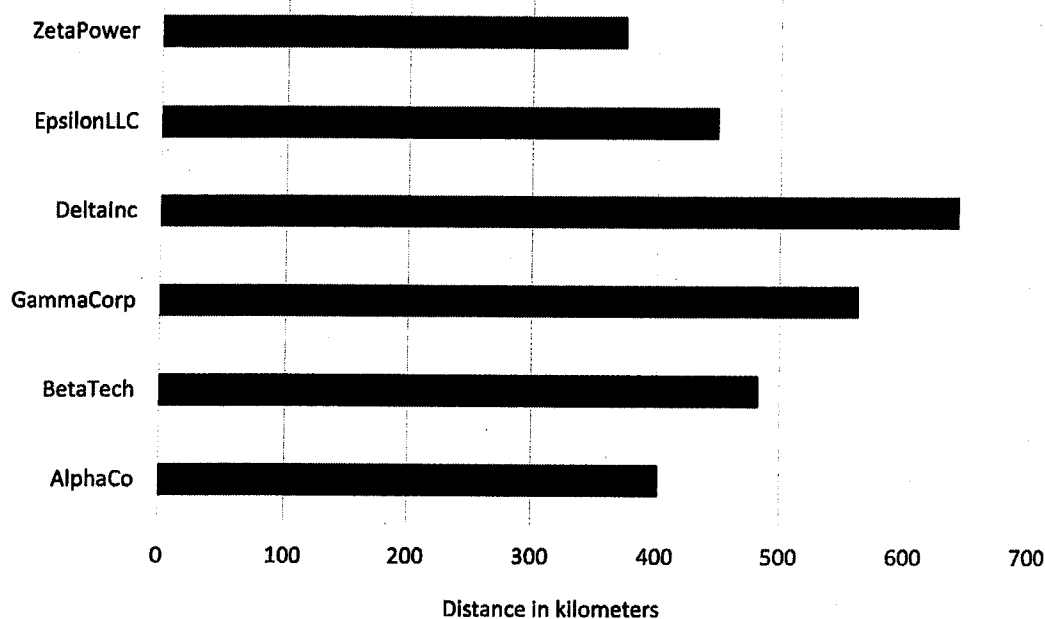
(29) I think he will win the race because he can run \_\_\_\_\_ than his classmates.

- (A) fast
- (B) fasted
- (C) faster
- (D) fastest

(30) How long does it take \_\_\_\_\_ the castle?

- (A) get to
- (B) to get to
- (C) to getting
- (D) to getting to

第4問: 次の図表とその図表についての2人の対話を読んで、問い(31)~(37)について最も適切な答えを、(A)~(D)の中から一つずつ選びなさい。



**John:** If people can drive so much \_\_\_\_\_(1)\_\_\_\_\_ using the lithium ion batteries made in Asia by DeltaInc and Gammacorp, why are they the least popular?

**Prof. Smith:** (a) There are a few reasons for this. First, as you said, let's think about distance. What do you notice about the manufacturers whose batteries travel less than 500 kilometers per charge?

**John:** They are made in Canada. Also, they are more expensive.

**Prof. Smith:** Yeah. Now, in the northern areas of America, Canada, and most of Europe, what needs do you think drivers may have?

**John:** Batteries that work in extremely cold weather.

**Prof. Smith:** Exactly. What other things do you think electric car owners want?

**John:** Maybe, how long it takes to charge the battery, how long they can use it for, and reliability.

**Prof. Smith:** Yes, the Asian battery manufacturers in the graph are all cheaper and have driving distances of over 500 kilometers per charge. But, these batteries are not reliable in cold weather and take a long time to charge. Also, finding people outside of Asia who can provide service for them is difficult.

**John:** I heard that Canadian manufacturers are catching up to Asian manufacturers regarding both price and driving distance. For example, AlphaCo batteries can now travel about 400 kilometers per charge, EpsilonLLC batteries approximately 450 kilometers, and BetaTech is just short of 500 kilometers per charge.

**Prof. Smith:** But \_\_\_\_\_(2)\_\_\_\_\_ batteries may take longer to catch up because of their driving distance per charge.

*All data and graphics created for examination purposes.*

- (31) Which of the following is most appropriate for ( 1 )?
- (A) farther
  - (B) faster
  - (C) more gradually
  - (D) more swiftly
- (32) In sentence (a), what does this refer to?
- (A) DeltaInc and Gammacorp batteries being made in America
  - (B) DeltaInc and Gammacorp batteries having longer charging times
  - (C) DeltaInc and Gammacorp batteries topping sales in America
  - (D) DeltaInc and Gammacorp not selling the most batteries
- (33) Which of the following is true?
- (A) Batteries made in Asia have the lowest overall prices.
  - (B) Battery driving distance is the most important factor for electric car owners.
  - (C) Canadian lithium-ion battery manufacturers have worse service.
  - (D) Cold weather affects lithium-ion battery performance positively.
- (34) Which of the following is implied by the conversation?
- (A) Asian battery manufacturers sell more batteries than Canadian manufacturers.
  - (B) Asian made batteries with a driving distance of less than 500 kilometers are the most popular.
  - (C) Canadian battery manufacturers sell more batteries than Asian manufacturers.
  - (D) Canadian made batteries with a driving distance greater than 500 kilometers are the most popular.
- (35) Which company name is appropriate for ( 2 )?
- (A) BetaTech
  - (B) EpsilonLLC
  - (C) GammaCorp
  - (D) ZetaPower
- (36) For electric car owners in America, which batteries are most difficult to repair?
- (A) BetaTech and AlphaCo
  - (B) DeltaInc and EpsilonLLC
  - (C) DeltaInc and GammaCorp
  - (D) ZetaPower and GammaCorp

(37) What is the best title for the graph?

- (A) Asian Manufacturers Top American Battery Sales
- (B) Charging Time Variation of Batteries
- (C) Driving Distance Variations Among Top Battery Manufacturers
- (D) Sales of Batteries in Canada



第5問: 次の英文を読んで、(38)~(42)のそれぞれの空欄に入る最も適切なものを、(A)~(D)の中から一つずつ選びなさい。また、問い(43)~(47)について、英文の内容から最も適切な答えを、(A)~(D)の中から一つずつ選びなさい。

The world as we know it is always\_\_\_\_(38)\_\_\_\_, and so too is our understanding of it. Facts - things we accept as true - can change and grow over time. From flat Earth theories to the understanding of diseases, the body of human knowledge is constantly developing. A long time ago, people thought the Earth was flat. This seemed like a simple truth, based on what we saw around us. But as explorers saw more of the world and\_\_\_\_(39)\_\_\_\_learned more, we started to understand that our planet isn't flat, but round. Even that fact has changed: now we know that Earth is a bit squashed - it's round, but wider in the middle than at the top and bottom. Another example is our place in space. For a long time, people thought that the Earth was at the center of everything, with the sun going around it. But in the 16th century, Nicolaus Copernicus showed that this wasn't true. He showed that the Earth goes around the sun, not the other way around.

In medicine, \_\_\_\_ (40) \_\_\_\_ have changed too. A long time ago, people thought that drilling holes in the head could make people better. Today, this sounds silly, and we know that such actions can be more hurtful than helpful. But not all changes in what we know take a long time. In our modern world, 'facts' can change quickly, sometimes causing \_\_\_\_ (41) \_\_\_\_\_. The COVID-19 crisis is a good example. At the start of the sickness, people in the United States thought that wearing masks was not needed. But as we learned more about how the sickness spreads, we started to say that everyone should wear a mask.

In our time, we also have to deal with 'fake news' - false or wrong information that is presented as true. Dealing with this needs careful thinking and a little distrust. During the COVID-19 crisis, some points of view were not able to be shared online, only for some of those views to later be accepted. This shows how quickly our understanding can change. The job of checking 'facts' is ongoing, especially in times of trouble. The changing of 'facts' shows how important it is to keep an open mind, think carefully, and be ready to change our \_\_\_\_ (42) \_\_\_\_ when new evidence comes. Whether a long time ago or now, what we understand about the world is always changing, as we look for the truth.

- (38) (A) changing  
(B) expanding  
(C) orbiting  
(D) watching
- (39) (A) athletes  
(B) politicians  
(C) scientists  
(D) students
- (40) (A) containers  
(B) facts  
(C) tablets  
(D) uniforms

- (41) (A) celebration  
(B) confusion  
(C) decoration  
(D) relaxation
- (42) (A) clothes  
(B) spots  
(C) tastes  
(D) views
- (43) Why did people long ago think the Earth was flat?  
(A) Because no one had thought about a round Earth.  
(B) Because they could only observe what was close to them.  
(C) Because they did not travel to different places.  
(D) Because they were not as intelligent as we are now.
- (44) What does the text say about how we understand sickness?  
(A) As science develops, we find out that old treatments were not always effective.  
(B) Drilling a hole in the head can cure some diseases.  
(C) Most of what we know about medicine has stayed the same since old times.  
(D) Our ideas about diseases have not changed much over time.
- (45) What is the writer's opinion on 'fake news' ?  
(A) It is a new problem that did not exist before.  
(B) It is easy to see and does not cause many problems.  
(C) It is necessary to think carefully and not trust everything.  
(D) It only happens with news about politics.
- (46) Why does the text suggest that some ideas about COVID-19 were first not allowed but then accepted?  
(A) Our ideas were changing, and as we learned more, we had to reconsider old ideas.  
(B) The ideas were not allowed because they were shocking.  
(C) The people in charge understood they had made a mistake.  
(D) There was a plan to hide the truth about the virus.
- (47) What is the main idea of the writer about 'facts' ?  
(A) Facts and the way we think about nature never change.  
(B) Facts can change when we have new information and learn more.  
(C) Facts from the past were always less accurate than now.  
(D) Facts usually stay the same and only change in special situations.

# 2024 年度学校推薦型選抜試験問題

## 小 論 文

### 【注意事項】

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## 小論文試験問題

この問題は論理的文章能力を問うものです。つぎの課題について、600字から800字の間で書きなさい。なお、どのような立場で論じていても採点には影響しません。

### 課題

会津大学では、毎年多くの学生が海外に留学します。一般に海外留学によって、学生は多様な文化を知ることができたり、語学力を高めたりできるなどのメリットがあります。しかし、留学する場合、学生の金銭的な負担が大きく、卒業が遅れるなどのデメリットもあります。また、現在では海外に行かなくても、多様な文化や語学をオンラインでも学べる時代になりました。あるいは、大学在学中には専門分野をしっかりと学んだ方がよいという考え方もあります。

あなたは、大学生のうちに海外に留学することについて賛成ですか、反対ですか。あなたの考えを理由をつけて述べなさい。