

大学院入学試験問題用紙 (1 of 3)

2025 年度 1 期

| 科 目 名 | 受 験 専 攻 | 受 験 番 号 | 氏 名 |
|-------|--------------------|---------|-----|
| 英語 | 農業工学 専攻 博士前期 課程 | | |

I. 次の文章の下線部に入る最も適切な単語に○を付けなさい。

Circle the most appropriate word in the underlined part of the following sentence.

- (1) Ms. Tanaka is quite _____ about classical music and plays piano in her spare time.
(a) knowledge (b) knowingly (c) knew (d) knowledgeable
- (2) Once the class had _____ ended, some of students started leaving the classroom.
(a) near (b) nearing (c) nearer (d) nearly
- (3) The update to the website must be completed _____ next Friday.
(a) beside (b) below (c) between (d) before
- (4) The rain was _____ heavy the other day that the driver had to stop the car along the roadside.
(a) too (b) so (c) even (d) quite
- (5) The newly opened café across the Setagaya-street is very busy _____ the late evening.
(a) especially (b) when (c) throughout (d) usually
- (6) After several months of _____, the corporation has decided to move this brunch to Tokyo.
(a) considered (b) considers (c) considering (d) consideration
- (7) _____ the trains are running on schedule, he will arrive in Tokyo station by 6 p.m.
(a) Upon (b) Accordingly (c) Because of (d) Provided that
- (8) In _____ one year, this company became the third largest company in the tractor industry.
(a) recently (b) alone (c) just (d) thoroughly
- (9) The research results indicate _____ parents with children tend to purchase more organic vegetable.
(a) much (b) about (c) that (d) to
- (10) If the shop clerk had not offered a discount, she _____ the T-shirt yesterday.
(a) will not buy (b) will not have bought (c) would not buy (d) would not have bought

大学院入学試験問題用紙 (2 of 3)

2025 年度 1 期

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II. 次の A から F の文章の 8 つの括弧内に入る語句を下の語群より選び記入せよ。

Fill in the eight brackets in the paragraph A to F by choosing from the <words> below.

A) According to a dictionary, conservation law is []
[]
(Source: Oxford Dictionary. Application Ver. 15.5.1105, MobiSystem, Inc., 2024)

B) According to a dictionary, [] is []
(Source: Oxford Dictionary. Application Ver. 15.5.1105, MobiSystem, Inc., 2024)

C) According to a dictionary, GIS stands for []
(Source: Oxford Dictionary. Application Ver. 15.5.1105, MobiSystem, Inc., 2024)

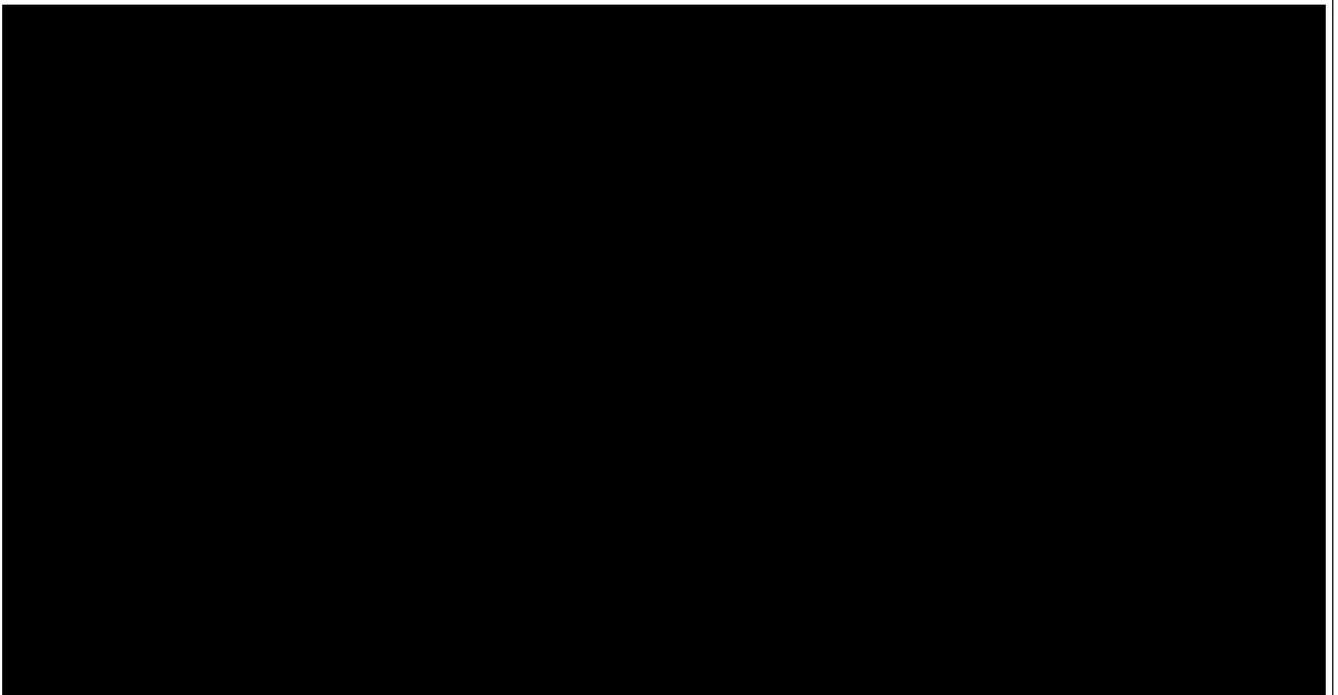
D) The gradual increase in the overall temperature of the Earth's atmosphere is called global warming, which is understood to be due to the [] effect.

E) According to a dictionary, [] is []
(Source: Oxford Dictionary. Application Ver. 15.5.1105, MobiSystem, Inc., 2024)

F) Soil texture is an indicator determined by the ratio of clay, [] and sand.

<words> arable, consistency, geological, geographical, global, greenhouse, ground, lens, mass, momentum, ridge, rock, silt, soil, solid, velocity, volume, world

III. 次の記事を読み質問 1 から 6 に英語で答えよ。 Read the following article and answer the questions 1-6 in English:



(Source: The Mainichi, June 20, 2024)

大学院入学試験問題用紙 (3 of 3)

2025 年度 1 期

| 科目名 | 受験専攻 | 受験番号 | 氏名 |
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| 英語 | 農業工学 専攻 博士前期 課程 | | |

Question 1. This article describes the development of a system that can generate electricity from [i] and [ii], using the [iii] within it.
Fill in the brackets.

<Ans.> (i) _____ (ii) _____ (iii) _____

Question 2. What power generation existing now is this new one compared to? <Ans.> _____

Question 3. This article describes an important characteristic of the spring water in this new technology is that the water temperature is [] throughout the year. Fill in the bracket.

Question 4. In the experiment conducted by the researchers, (i)when was the temperature difference stated to be maximum?
Also, (ii)what was the average amount of electricity at that time?

<Ans.> (i) _____ (ii) _____

Question 5. Based on this article, how much volume of the annual electricity consumption (kWh) per household?

<Ans.> _____

Question 6. How, for example, does Mr. Amagai currently plan to store and use the power generated from this technology?

<Ans.> _____

大学院入学試験問題用紙

2025 年度 1 期

| 科 目 名 | 受 験 専 攻 | 受験番号(number) | 氏 名 (Name) |
|---------------------------|-----------------------------|--------------|------------|
| バイオロボティクス Bio-robotics | 農業工学 専攻 博士前期 課程 (Master) | | |

1. 農業ロボットを 5 つ挙げなさい. (4×5 点+20 点)

また産業用ロボットと比較して, 農業ロボットにはどのような課題があるかを説明しなさい.

Answer 5 agricultural robot names, and research subjects for agricultural robots compared to industrial robots.

農業ロボット (Names of 5 agricultural robots)

() () () ()
() () () ()

農業ロボットの課題 (Research subjects for agricultural robots compared to industrial robots) :

2. 次のキーワードを全て用いて, 農業ロボットの説明をしなさい. (30 点)

キーワード: 農業ロボット, センサ, アクチュエータ, コンピュータビジョン, 制御, AI

Please explain the agricultural robot using all of the following keywords,

Keywords: agricultural robot, sensor, actuator, computer vision, control, AI

3. 農業ロボットが ピーマン を認識して収穫するフローチャートを描きなさい. (30 点)

Draw a flowchart for the agricultural robot to recognize and harvest **green peppers**.

< flow chart >

大学院入学試験問題用紙

2025 年度 1 期

| 科 目 名 | 受 験 専 攻 | 受 験 番 号 | 氏 名 |
|--|--------------------|---------|-----|
| 広域環境情報学 | 農業工学 専攻 博士前期 課程 | | |
| I. 衛星画像データを用いた土地被覆の分類について (1) 分類手法を 1 つ挙げ、(2) そのメカニズムについて解説せよ。 | | | |
| | | | |
| II. (1) UAV 空撮画像から DEM を生成する手法について解説し、(2) 国土地理院において提供されている DEM の種類と、(3) 複合的活用解析例を 1 つ挙げよ。 | | | |
| | | | |
| III. (1) リモートセンシング指数 (植生指数など) 画像を用いた農地のモニタリング手法と、(2) モニタリング結果のスマート農業への活用可能性について 1 例を挙げて解説せよ。 | | | |
| | | | |

大学院入学試験問題用紙

2025年度1期

| 科目名 | 受験専攻 | 受験番号 | 氏名 |
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| 農村環境工学 | 農業工学 専攻 博士前期 課程 | | |

次の4問から2問を選択し、問題ごとに分けて答案用紙に解答せよ。

- I 農村部での排水の特徴および排水処理の工程について述べよ。
- II ビオトープ整備の原則をニッチという視点から説明せよ。
- III 近年の農地集積について述べよ。
- IV メタン発酵法の欠点について述べよ。

大学院入学試験問題用紙

2025年度1期

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| 農村環境工学 | 農業工学 専攻 博士前期 課程 | | |

(答案用2枚目)

大学院入学試験問題用紙

2025 年度 2 期

| 科目名 | 受験専攻 | 受験番号(number) | 氏名 (Name) |
|---------------------------|-----------------------------|--------------|-----------|
| バイオロボティクス Bio-robotics | 農業工学 専攻 博士前期 課程 (Master) | | |

1. 農業ロボットを 5 つ挙げなさい. (4×5 点+20 点)

また産業用ロボットと比較して, 農業ロボットにはどのような課題があるかを説明しなさい.

Answer 5 agricultural robot names, and research subjects for agricultural robots compared to industrial robots.

農業ロボット (Names of 5 agricultural robots)

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() () ()

農業ロボットの課題 (Research subjects for agricultural robots compared to industrial robots) :

2. 次のキーワードを全て用いて, 農業ロボットの説明をしなさい. (30 点)

キーワード: スマート農業, 農業ロボット, センサ, アクチュエータ, AI, 制御

Please explain the agricultural robot using all of the following keywords,

Keywords: smart agriculture, agricultural robots, sensors, actuators, AI, control

3. 農業ロボットがイチゴを認識して収穫するフローチャートを描きなさい. (30 点)

Draw a flowchart for the agricultural robot to recognize and harvest strawberrys.

< flow chart >

大学院入学試験問題用紙

2025 年度 2 期

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| 英語 | 農業工学 専攻 博士前期 課程 | | |

I. 次の A~C の文章の 6 つの括弧内に入る語句を記入せよ（重複使用可）。

Fill in the blank in each sentence with one of the following words:

accelerator, carbon, device, equipment, gravity, hydrogen, intelligence, mass, memory, nitrogen, phosphorus, potassium, sodium, velocity, water

A) According to a dictionary, artificial [] is

(The two brackets contain the same word.)

(Source: Oxford Dictionary of English. ver. 15.6.1122, MobiSystem, Inc., 2025)

B) A way to define [] is as

(Source: Everything you need to know about physics, Pocket Books, 1999)

C)

(Source: Ecology - A pocket guide, Univ. California Press, 1998)

II. 次の記事を読み質問 1 から 6 に英語で答えよ。

Read the following article and answer the questions 1-6 in English.



(Source: The Mainichi, November 9, 2024)

Question 1. What is the name of the remains mentioned in this article?

<Ans.>

Question 2. Assuming the site is square, what is its approximate size? Choose one from the following options.

<Options> 2 meters square / 20 meters square / 30 meters square / 80 meters square / 2000 meters square

Question 3. How many earthen pits were confirmed to contain vegetables and parasitic eggs?

<Ans.>

Question 4. Which of the following items was not found from the excavated soil?

<Options> pollen / seeds / seashell / fishbone / parasitic eggs

Question 5. What do you call a specialist who studies ancient history and culture through excavations and related research?

<Ans.>

Question 6. Why did the researchers conclude that these pits were the remains of toilets?

<Ans.>

III. 次の文章の下線部に入る最も適切な単語に○を付けなさい。

Circle the most appropriate word in the underlined part of the following sentence.

- (1) _____ his presentation is finished, Mr. Tanaka will have to go to the station to ride train.
(A) In spite of (B) Ever (C) As soon as (D) With
- (2) Please inform us of your availability for next month so that _____ can set up an interview as soon as possible.
(A) us (B) our (C) we (D) ourselves
- (3) Before study management, Mr. Sato obtained a degree in _____ from Tokyo University.
(A) account (B) accounting (C) accountant (D) accounted
- (4) Over the _____ three months, Ms. Hayashi has traveled extensively on business.
(A) sooner (B) past (C) most (D) since
- (5) OK store has a wide selection of organic meat and _____ grown fruit and vegetables.
(A) local (B) location (C) localize (D) locally
- (6) A recent study shows that the number of university graduates seeking a _____ job has been decreasing dramatically.
(A) challenging (B) challenged (C) challenge (D) challenger
- (7) Due to a change in his travel plans, Ms. Yamada called the hotel to request the _____ of her room reservation for June 10.
(A) cancel (B) cancellation (C) cancelling (D) cancels
- (8) Road condition in Niigata were poor because it had snowed _____ the previous night.
(A) along (B) during (C) between (D) as
- (9) if you miss the train to Sapporo, you _____ to catch the first bus available.
(A) should try (B) tried (C) are trying (D) have tried
- (10) The directors of the ABS Corporation _____ in Meeting Room 3 every Monday, unless the room is being used for another purpose.
(A) meet (B) meeting (C) met (D) meets