

2026年度
大学院総合情報学研究科
(博士前期課程)
入 学 試 験

Ⅱ 期

英 語
(全系列共通)

注意事項

1. 「英語」問題は表紙を除き2ページある。脱落等に気がついた場合には監督者に申し出ること。
2. 解答は、解答欄に直接記入すること。
3. 受験番号および氏名を全てに明記すること。
4. 試験終了後は、この表紙・問題用紙を提出すること。

受験番号						
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氏 名	
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次の文を読んで、すべての設問に答えなさい。

Data centers could use up to ^(a)9% of total electricity generated in the United States by the end of the decade, more than doubling their current consumption, as technology companies pour funds into expanding their computing hubs, the Electric Power Research Institute said on Wednesday.

Depending on the adoption pace of technology such as generative artificial intelligence (AI), which is ^(b)fueling the expansion of data centers, and the energy efficiency of new centers, the estimated annual growth rate of electricity use by the industry ranges from 3.7% to 15% through 2030, the institute's analysis said.

Data centers, along with expanding domestic manufacturing and electrification of transportation, are lifting the U.S. electricity industry out of two decades of flat growth. The centers require massive amounts of power for high-intensity computing and cooling systems, with a new large data center requiring the same amount of electricity needed to power 750,000 homes, according to numerous energy company earnings calls this year. A ^(c)doubling in data centers' power use could strain the country's electric grid and lead to rising power bills and outages.

Since the roll-out of OpenAI's ChatGPT in ^(d)2022, the data center business has become one of the world's fastest-growing industries. While early ChatGPT searches required about 10 times the electricity of a typical Google search, the growing use of generative AI to make movies and music could require vastly more power, the institute said.

"With 5.3 billion global internet users, widespread adoption of these tools could potentially lead to a ^(e)step change in power requirements," according to the institute, which recommended better data center energy efficiency and more grid investment.

(Based on "Data centers could use 9% of US electricity by 2030, research institute says", Reuters, May 30, 2024, <https://www.reuters.com/business/energy/data-centers-could-use-9-us-electricity-by-2030-research-institute-says-2024-05-29/>)

設問 1 下線部(a) 9% は何の予想であり、何が原因でそのような予想になっているのか日本語で記述しなさい。(25 点)

設問 2 下線部(b) fueling は何を指しているのか、何が原因でそれが起きているのか、日本語で記述しなさい。(20 点)

受験番号 () 氏名 ()

設問 3 下線部(c) doubling が起きることにより、どんな結果が危惧されるのか日本語で記述しなさい。(15点)

設問 4 下線部(d) 2022 には何がきっかけで、どのような経済的変化が起きたのか日本語で記述しなさい。(15点)

設問 5 下線部(e) step change はなぜ起きる可能性があるのか、その影響を抑えるために何を行わなければならないのか日本語で記述しなさい。(25点)

(以上)