2025 年度
創価大学 大学院 理工学研究科【情報システム工学専攻】
博士前期課程　一般選抜試験(第Ⅱ期)試験問題

英　　語

開始時刻　午前 9 時 30 分

終了時刻　午前 10 時 15 分

【注意事項】

１．解答用紙には受験番号、氏名を必ず記入してください。

２．試験終了後、答案用紙は必ず提出してください（問題用紙は提出しなくてよい）。

３．**問題番号が明記された答案用紙を使用し、解答してください。**

<問題1> 次の英文を読み、(1) 〜(3) に答えよ。解答は日本語でも英語でもかまわない。

A trio of AI researchers and experts in Lithuania and England have tossed some cold water on the hype surrounding generative AI and predict that in 2025, companies and investors will have to lower their expectations regarding what the technology and large language models (LLM) can do.

One issue is scalability, according to Ali Chaudhry, research fellow at University College London. In some cases, the technology is not as scalable as expected. "I think we will see diminishing returns in the capabilities of LLMs. Some AI labs are already hinting that scaling laws are not as effective anymore," he said in a statement.

There will be other obstacles such as regulation and sustainability, according to research by Chaudhry, Adi Andrei, co-founder of AI software vendor Technosophics, and Web data gathering firm Oxylabs' CEO Julius Černiauskas who are members of Oxylabs' AI/ML Advisory Board.

Increasing regulation and general concerns regarding the dangers of AI are factors that will play into curbing the gen AI enthusiasm, Chaudhry says. "I am predicting more regulations for controlling the negative impact of Generative AI. Generally, 2025 will be very important for AI Safety, and we will see a lot of work (technical and non-technical) in this space," he said,

Černiauskas also pointed at the energy consumption concerns around AI as a dampening factor. "Responsible AI and Green AI will become even bigger topics next year as we are more used to the technical capabilities of AI. Servers that support AI development put a strain on the environment, and there are many risks flowing from a lack of transparency in how AI is developed and functions."

Andrei notes that there is a rising movement of content creators against the Gen AI movement. "This has raised awareness within the general population of the irreconcilable issues posed by technology and the fact that it is being forced onto people by billionaires and their organizations," Andrei said.

<div style="text-align:right">Jan 13, 2025　from Network World (www.networkworld.com)</div>

(1) What is one of the main reasons the experts predict a decline in enthusiasm for generative AI in 2025?

(2) According to Julius Černiauskas, what are two major concerns that could slow down the development of generative AI?

(3) Why might content creators be opposed to the generative AI movement, according to Adi Andrei?

<問題2> 次の英文を読み、(1) 〜(2) に答えよ。解答は日本語でも英語でもかまわない。

A cybersecurity firm has identified distributed denial of service, or DDoS, attacks targeting 46 companies and organizations in Japan.

Major Japanese companies including Japan Airlines, MUFG Bank and NTT Docomo were under cyberattack from late December. The businesses say this led to glitches in their systems or disrupted access to their websites.

The attacks are believed to be the DDos type, in which massive amounts of data are sent to websites or servers to make them crash.
Trend Micro has identified and analyzed networks called botnets that were highly likely used in the attacks.

The company has learned that 46 businesses and organizations in Japan came under such attacks between December 27 and January 9.

It says the targets included companies in brokerage, insurance, transport and other sectors, and had little in common. Companies in the United States and other countries were also targeted.

Okamoto Katsuyuki at Trend Micro says the attacks may have been part of the same campaign. He says that while it's difficult to determine their purpose, they may have been carried out for surveillance in preparation for a full-fledged attack.

<div align="right">Jan. 12, 2025　from NHK World Japan (www3.nhk.or.jp)</div>

(1) According to the passage, what is the primary effect of a DDoS attack on a website or server?

(2) What possible purpose does Okamoto Katsuyuki suggest for the DDoS attacks, and what might this indicate about future risks?

<問題3> 以下のインターネットに関する文章を読み，問1〜7に答えなさい.

(1)Light-based technologies, especially those enabling fiber-optic communications, are fundamental to modern information exchange. Following a heritage that began with electrical inventions such as the telegraph and telephone, fiber-optic cables have now replaced (i) wires because of the huge amounts of data that they can carry compared to their electrical counterparts. Light-based technologies transformed a world-wide web of mainly academic networks into the early internet of the (ii) and ultimately the indispensable communication network that underpins the economy of the 21st century. (2)Without the Internet, there would be no Google or "cloud", no e-commerce or smart phone apps, no streaming music or ability to make a video phone call on your tablet to family members or business around the world.

Light has fueled virtually every innovation we take for granted on the Internet, with photonic devices serving as the essential means for transmitting and receiving data. Light-based transmission systems expand the amount of Internet (iii) available for music and video downloading, for picture sharing on Facebook, and for all the other data streaming online and in the cloud. Transmissions are increasingly measured in (iv) (trillion hertz), an enormous number compared to the less than 10-billion-hertz-rate of electronics. (3)New advances in all-optical computing, including silicon photonics, will be a driving force behind the Internet of the future, providing increased bandwidth and computing power to meet society's growing appetite for information, entertainment, and communication.

(Eugene Arthurs, "Celebrating Light", SPIE Press, 2015. より抜粋，一部改変)

1. 下線部(1)を日本語に訳しなさい.
2. 下線部(2)を日本語に訳しなさい.
3. 下線部(3)を日本語に訳しなさい.
4. (i)に入る単語で最もふさわしいものを以下から選びなさい.
   (1) copper   (2) gold   (3) silver   (4) silicon
5. (ii)に入る年代で最もふさわしいものを以下から選びなさい.
   (1) 1950s   (2) 1970s   (3) 1990s   (4) 2010s
6. (iii)に入る単語で最もふさわしいものを以下から選びなさい.
   (1) distance   (2) capacity   (3) bandwidth   (4) area
7. (iv) に入る単語で最もふさわしいものを以下から選びなさい.
   (1) kilohertz   (2) megahertz   (3) gigahertz   (4) terahertz