

2025 年度 大学院医学研究科博士課程入学試験（I 期）筆記試験（英語）

1. Answer the questions in English after reading the following article.

[Redacted text block]

[Redacted text block]

[REDACTED]

Modified from **Autism Spectrum Disorder: A Review**. Tomoya Hirota, Bryan H. King, JAMA (The Journal of the American Medical Association) 329(2):157-168 (2023)

1-1 According to the passage, are the following sentences TRUE (T) or FALSE (F)?

A) ASD is a single etiology disorder.

B) Difficulties in social communication manifest themselves in the pragmatics and social norms associated with communication.

C) The estimated prevalence of ASD in the United States nearly doubled in the decade from 2008 to 2018, due to environmental changes such as widespread use of the Internet.

D) There are no known biomarkers to diagnose ASD.

E) People with ASD have higher rates of depression, anxiety, sleep disorders, and epilepsy.

F) Interventions based on behavior analytic principles can only be used with young children.

G) At least 25 hours per week is recommended for the Naturalistic Developmental Behavioral Interventions, but randomized clinical trials have shown no difference in outcomes between 15 hours per week for 12 months and 25 hours per week for 12 months.

**1-2 In 100 words or less, explain in your own words how this discussion suggests that diagnosis and intervention for developmental disabilities should be conducted.**

2. Answer the question in English after reading the following article.

[REDACTED]

**Modified from** The evolving tumor microenvironment: From cancer initiation to metastatic outgrowth. Karin E. de Visser, Johanna A. Joyce, *Cancer Cell* 41(3):374-403 (2023)

**2-1 Write at least 70 words describing the concept of cancer therapy that targets the tumor microenvironment. Avoid simply copying from the passage.**

3. Answer the question in English after reading the following article.

[REDACTED]

**Modified from** Foundation models for generalist medical artificial intelligence. Michael Moor, et al., Nature 616, 259–265 (2023)

**3-1 Based on the characteristics and limitations of current medical AI as described in the discussion above, write at least 100 words describing what the desired medical AI should be from the perspective of its use in a clinical setting.**

2025 年度 大学院医学研究科博士課程入学試験（Ⅱ期）筆記試験（英語）

1. Answer the questions in English after reading the following article.

[Redacted text block]

[Redacted text block]

[Redacted text block]

[REDACTED]

Modified from, **Fecal microbiome and metabolome differ in healthy and food-allergic twins.** Bao R, Hesser LA, He Z, Zhou X, Nadeau KC, Nagler CR. *J Clin Invest.*131(2):e141935.(2021)

**1-1 According to the passage, are the following sentences TRUE (T) or FALSE (F)?**

- A) Food allergies are increasing significantly in developed countries around the world.
  
- B) Non-communicable diseases (NCDs) such as food allergies, obesity, diabetes, asthma, autism and inflammatory bowel disease are associated with an imbalance in the gut microbiota.
  
- C) Microbiota maturation and immune system development proceed independently in early childhood.
  
- D) Epidemiological studies have not found differences in gut microbiota between children with food allergies and healthy children.

E) The discontinuation rate in clinical trials of oral immunotherapy is high.

F) Microbiome-modulating therapeutics may improve both the efficacy and safety of oral immunotherapy.

**1-2 In 50 words or more, explain in your own words the causes and treatments of food allergies discussed in this article.**

**2. Answer the question in English after reading the following article.**

[REDACTED]

Modified from, The mutational signature profile of known and suspected human carcinogens in mice. Riva L, et al. Nat Genet. 52:1189-1197 (2020)

**2-1 Write at least 50 words on how carcinogens cause cancer. Avoid simply copying from the passage.**

**3. Answer the question in English after reading the following article.**

[REDACTED]

[REDACTED]

Modified from, Volitional activation of remote place representations with a hippocampal brain-machine interface. Lai C, Tanaka S, Harris TD, Lee AK. Science.382:566-573 (2023)

3-1 Describe in more than 80 words how you would carry out an experiment to test whether the simulation of a scenario in the mind is based on the animal's own intentions or not.