2025 年度春季Ⅱ期　大学院歯学研究科入学試験
2024 年度第 2 回　大学院歯学研究科外国語試験　出題意図および解答・解答例

【出題の意図】

大学院歯学研究科における外国語試験は、英文読解、英作文、および英語論述形式の 3 つの形式から構成されています。

英文読解においては、限られた時間内に専門的な内容を正確に把握するために必要な能力を問うために実施されています。また、英作文においては、正確な文法や語彙の運用能力を図り、英語論述問題においては、論理的かつ正確な英文構成力に関して評価を行うものです。

歯学研究の最先端情報や学術論文の殆どが英語で発信されています。したがって、大学院の入学においても、英語試験により、英語論文を正確に読解し、研究動向を自ら把握できる基礎力を最低限担保することにより、大学院入学後の円滑な研究の遂行と学位論文の作成が可能になるものと考えられ実施されています。

※以下に記載しているものは解答例です。解答例以外にも正解とする場合があります。

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【英語 A】

Q1.

In general, many of the physical changes caused by illness manifest themselves as pain. In fact, in dental practice, the majority of complaints from patients are related to tooth pain. However, the nature and mechanism of pain are not all the same, and vary depending on the organ that is impaired or the type of disease. Therefore, in order to clarify the mechanism of pain generation, it is first necessary to understand the characteristics of each organ.

Q2. .

パーキンソン病は神経系に影響を及ぼす運動障害です。パーキンソン病の症状は徐々に現れます。多くの場合、片手の軽い震えや身体のこわばりから始まります。時間の経過とともに他の症状も現れ、認知症を発症する人もいます。パーキンソン病の症状は主に神経伝達物質であるドーパミンの減少または枯渇によって引き起こされます。パーキンソン病では、血液循環やその他の自律神経機能に寄与する別の神経伝達物質であるノルアドレナリンを生成する神経末端が損傷することもあります。

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【英語 B】

Q1. What are the psychological effects of smell?

Smell has the ability to unlock memories automatically and unconsciously, almost like magic.

Q2. How many percent of Americans over 80 experience trouble smelling?
39 percent of Americans over 80 have trouble smelling.

（Thirty-nine percent of Americans over the age of 80 have anosmia.）

Q3. When your nose loses their sharpness, what kind of problem do you have?

Decease of smell detection is associated with poor memory, declines in cognition and overall health, as

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well as dementia.

It is also related to mental health problems, such as depression.

Q4. What kind of disease is related to the loss of smell as its first symptom?

Alzheimer's disease's first symptom is often the loss of smell.

Q5. Give two reports about training the sense of smell that was psychologically effective.

In 2022, it was reported that training the sense of smell of depressed elderly people for several months

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reduced the symptoms of depression in people who had an impaired sense of smell.

Another study in 2021 reported that olfactory training not only improved depression, but also helped

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people recall words more quickly.

Q6. What was found by scanning the brains of master sommeliers?

Brain scans showed that the insular cortex (the area that processes emotions) and the entorhinal cortex (an area whose dysfunction is involved in Alzheimer's disease) were enlarged in master sommeliers.

Q7. Why did they consider that olfactory training might lead to improvement in dementia?

The researchers theorized that olfactory training may increase the thickness of the hippocampus, the brain's memory center, which may help improve dementia.

Q8. Please explain Dr. Hummel's testing and scoring methodology.

In this test, the experimenters poured four strong- smelling products -- wine, soap, laundry detergent, honey or coffee -- into separate cups. Then, participants were blindfold and offered the cups to smell. They were given one point if they could smell something and two if could identify it.

Q9. According to Dr. Banks, what kind of training do sommeliers undergo to learn the nuances of aroma? State two methods.

They often visit grocery stores to smell fruits and vegetables. Another strategy is that they use a nighttime scent diffusing machine that wafts essential oils while they sleep.

Q10. Is there a memory that was brought back to you by a particular smell? Tell us about it.

The smell of sweet beans often reminds me of when I enjoyed tea time with my grandmother.

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【英語 C】

Q1.　Why were dental clinics initially considered high-risk environments during the COVID-19 pandemic, and what measures helped to mitigate these risks?

Dental clinics were initially considered high-risk environments because they performed aerosol generating procedures. However, enhanced infection control measures reduced the risk.

Q2.　How was saliva utilized during the pandemic, and what advantages did it offer over traditional diagnostic methods?

saliva samples were used as a non-invasive and reliable method of detecting SARS-CoV-2, which reduced the need for nasal and throat swabs.

Q3.　Describe the role of tele-dentistry during the pandemic and its impact on patient care.

Tele-dentistry enabled remote consultations and triaging to decide the urgency of in-person visits, minimizing exposure risks under social distancing measures.

Q4.　What were the main challenges faced by dental clinics and patients due to disruptions in routine services?

Many clinics were limited to providing emergency treatment only and had to delay regular check-ups, which increased later demand for urgent procedures and highlighted the importance of oral hygiene and access to professional care.

Q5.　Based on the text, what long-term changes are expected in dental education and practice as a result of the pandemic?

Infection control training will likely become standard in dental curricula, tele-dentistry will continue to evolve, and research will develop materials and techniques that reduce aerosol production.

Q6.　In your opinion, how can new infection control measures be made more practical for dental clinics? Please describe your opinion in your answer.

To make measures more practical, clinics should standardize workflows and training for PPE, mouth rinses, rubber dams, and ventilation, with scalable upgrades to air filtration and clear protocols for routine care.

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【英語 D】

After obtaining my doctorate, my dream is to become an independent clinical researcher who advances research in the oral and maxillofacial field while improving patient care. Specifically, I wish to continue conducting clinical research that integrates basic dental science with clinical medicine, particularly in the fields of tooth regeneration and periodontal treatment. Furthermore, through internationally competitive, high-quality research, I aim to develop new diagnostic and treatment strategies for oral diseases. Simultaneously, I aspire to become a mentor who can cultivate the next generation of dentists and researchers while fostering scientific curiosity and ethical professionalism. Ultimately, my goal is to contribute to global oral health by applying research findings to evidence-based dental care and building strong international collaborations that connect dental research with broader medicine. Furthermore, I wish to cultivate a research mindset through my degree and practice evidence-based dentistry in the field of home-based dental care.

(the number of words: 143)