

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

〈出題意図〉

本学における大学院医学研究科入学試験・外国語試験は、多岐にわたる領域から外国語（英語）論文が選定され、外国語（英語）の設問に対して外国語（英語）あるいは正誤で解答する形式が採用されている。その意図するところは、幅広い医学・健康・生命科学に関する外国語（英語）論文を理解するに足りる十分な語学力と設問に対して適切に解答できる論理力を判定することにある。このような能力は、高度な医療や研究を展開するために必要不可欠であり、よって、本試験でその能力の有無を判定するものである。

【注意】

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。

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

英語 A Questions & Answers

Answer the questions in English.

Q1. What is ‘catastrophic forgetting’ which the brain avoids?

〈解答例〉

‘catastrophic forgetting’ is the distortion and overwriting of previously established memories when new ones are created.

Q2. When did the brain’s replay of experiences mostly happen in the mice study to explore a brain function during sleep?

〈解答例〉

Most of the brain’s replay of experiences took place when the animals’ pupils were small.

Q3. What technique did the scientists utilize to investigate whether pupil size and memory processing are linked?

〈解答例〉

They utilized a technique called optogenetics, which uses light to either trigger or suppress the electrical activity of genetically engineered neurons in the brain.

Q4. Under what condition had the mice completely forgotten the location of the treat after it awakened?

〈解答例〉

Once awakened, the mice had completely forgotten the location of the treat — but only if firing had been reduced during the small-pupil stage.

Q5. What did the mice do when the research team reduced bursts of neuronal firing during the large-pupil phase shortly after a lesson? What did the result indicate?

〈解答例〉

They went straight to the treat. The result indicated that if bursts of neuronal firing were reduced during the large-pupil phase, their fresh memories were intact.

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

英語 B Questions & Answers

Answer the questions in English.

Q1. What are the core components for the management of prostate cancer?

〈解答例〉

Serum PSA testing, digital rectal examination (DRE), and systematic transrectal ultrasonography guided biopsies are the core components for the management of prostate cancer.

Q2. What is the probability of diagnosing prostate cancer based on a biopsy?

〈解答例〉

The probability of a biopsy-based diagnosis of prostate cancer is 25%.

Q3. What are the four indicators of the 4K score?

〈解答例〉

4Kscore incorporates four distinct kallikrein indicators (tPSA, fPSA, intact PSA, and hK2).

Q4. What tumors overexpress PMEPA1 (isoform-a)?

〈解答例〉

Multiple solid tumors, including pancreatic endometrial tumor, prostatic adenocarcinomas, stomach cancer, renal cancer, breast cancer, and colon cancer, were shown to overexpress PMEPA1 (isoform - a).

Q5. What are the immunohistochemical markers associated with metastasis-free survival and prostate cancer-specific mortality?

〈解答例〉

PTEN, Ki67, zinc-alpha 2 glycoprotein (AZGP1), p53 nuclear accumulation, and indicators of neuroendocrine development are some of the immunohistochemistry markers linked to metastases free survival and prostate cancer-specific mortality.

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

英語 C Questions & Answers

Answer the questions in English.

Q1. What is the most impactful factor involved in depression among resident physicians?

〈解答例〉

The most impactful factor is long work hours.

Q2. Why do resident physicians still have a high prevalence of depression?

〈解答例〉

Restrictions that do not meaningfully reduce the actual workload and work hours appear to have minimal effects on well-being, and in some cases, the effects are counterproductive.

Q3. What factors contribute to substantial improvement in physician satisfaction?

〈解答例〉

The use of scribes to reduce the electronic health record (EHR) workload as well as the addition of clerical support.

Q4. Why is the prevalence of depression, burnout, and suicidality higher among female physicians than among male physicians?

〈解答例〉

Sexual harassment and work–family conflict are substantially more common among female physicians than among male physicians, and female physicians also encounter effects of sex discrimination, such as receiving lower pay than their male colleagues; these experiences are associated with poorer well-being and attrition from the workforce.

Q5. What is important for the next phase of efforts to improve physician well-being?

〈解答例〉

For the next phase of efforts to improve physician well-being, it is critical to accurately measure differences in well-being among practice settings and over time and to assess and compare the effects of interventions and reforms.

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

英語 D Questions & Answers

If the following sentence is correct, please enter ○, and if it is incorrect, enter ×.

〈解答〉

1. (○) A male mouse's diet leaves a stamp on RNA molecules in his sperm.
2. (○) Mitochondrial RNAs that sense a father's diet are delivered from sperm to egg, affecting offspring metabolism.
3. (×) Dr. Chen also contributed to this study as a research member.
4. (×) Metabolic problems are not inherited from mothers to their offspring.
5. (○) The mechanism by which a father's diet affects his sons' health, but not his daughters' health, is not fully understood.