

受験番号	
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令和9年度4月入学、令和8年度10月入学

北海道大学大学院医理工学院 博士後期課程 課題論文

課題1及び課題2に答えよ。

課題1

以下の文章は「The global health workforce crisis: are task-shifting strategies sustainable?」という論文からの抜粋・改変である。この文章を参照して、長期的な医療従事者不足を解決するためのタスクシフトの活用について、その課題と医理工学的な解決策を含めて、自身の考えを600字以上800字以内で論述せよ。

著作権保護のため文章を省略しております

(出典：BMJ Glob Health (2025), DOI: 10.1136/bmjgh-2025-019264 より抜粋・改変・翻訳)

Examinee's Number	
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Essay Examination for Doctoral Program
Graduate School of Biomedical Science and Engineering, Hokkaido University
(April 2027 enrollment, October 2026 enrollment)

Answer the following questions 1 and 2.

Question 1

The following passage is an excerpt from the article entitled "The global health workforce crisis: are task-shifting strategies sustainable?" With reference to this excerpt, write your own thoughts in 40 to 50 lines on the use of task-shifting to address the long-term shortage of healthcare workers, including its challenges and solutions from Biomedical Science and Engineering standpoint.

This text has been omitted due to copyright restrictions.

(Excerpted and adapted from *BMJ Glob Health*. (2025), DOI: 10.1136/bmjgh-2025-019264)

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課題 2

以下の文章は、「Imaging and treatment of brain tumors through molecular targeting: Recent clinical advances」という論文の抜粋である。この文章には、脳腫瘍の診断・治療における「Unmet Medical Needs」とそれを解消するためのアプローチ・解決策の例が記載されている。本課題では、自身が重要と考える「Unmet Medical Needs」の例を一つ挙げ、そのニーズを満たすための医理工学的なアプローチまたは解決策について、自身の考えを 600 字以上 800 字以内で論述せよ。

著作権保護のため文章を省略しております

(出典 : *Eur J Radiol.* (2021), DOI: 10.1016/j.ejrad.2021.109842 より抜粋・改変)

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Question 2

The following passage is an excerpt from the article entitled "Imaging and treatment of brain tumors through molecular targeting: Recent clinical advances." It presents an example of unmet medical needs (or unresolved medical challenges) in the diagnosis and treatment of brain tumors, along with approaches and solutions proposed to address them. Give an example of unmet medical needs (or unresolved medical challenges) that you consider important. Then write your own idea on approaches or solutions to address that need in 40 to 50 lines from the viewpoint of Biomedical Science and Engineering.

This text has been omitted due to copyright restrictions.

(Excerpted and adapted from *Eur J Radiol.* (2021), DOI: 10.1016/j.ejrad.2021.109842)