Graduate School of Medicine, Akita University
Entrance Examination (Master Course)
(Second time)

Essay

12:40～14:10
December 18, 2025

You have four QUESTION SHEETs and three ANSWER SHEETs.
Write all your answers on your ANSWER SHEETs.
Submit only your ANSWER SHEETs.
Do not open the questions until the supervisor gives instructions.

I Read the following passage and answer the questions.

(Text omitted)

(Text omitted)

(Text omitted)

(Text omitted)

< Tetsuro Matsuzawa. “Primate Memory”. Inference. Vol6, No.3, 2021, excerpted with partial modifications >

Q1 Explain the characteristics of the chimpanzee’s working memory as described in the passage, referring to the experimental methods and findings. Your answer should be within 120 words.

Q2 Describe the idea of the Cognitive Tradeoff Theory proposed by the author. Use the information presented in the passage and explain it clearly in your own words. Your answer should be within 120 words.

Q3 According to the author, what significance does “a heart of sharing supported by the power of imagination” have in human evolution? Discuss your own thoughts on its meaning and importance. Your answer should be within 120 words.

Applicant Number		Name	

Essay（Master Course）: Answer Sheet

I.

Q1 Explain the characteristics of the chimpanzee's working memory as described in the passage, referring to the experimental methods and findings. Your answer should be within 120 words.

Applicant Number		Name	

Essay（Master Course）: Answer Sheet

I.

Q2 Describe the idea of the Cognitive Tradeoff Theory proposed by the author. Use the information presented in the passage and explain it clearly in your own words. Your answer should be within 120 words.

Applicant Number		Name	

Essay（Master Course）: Answer Sheet

I.

Q3 According to the author, what significance does “a heart of sharing supported by the power of imagination” have in human evolution? Discuss your own thoughts on its meaning and importance. Your answer should be within 120 words.

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Entrance Examination for 2026 Admission (Master Course)
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Essay

Sample Answer, Point Allocation

Q1 Explain the characteristics of the chimpanzee's working memory as described in the passage, referring to the experimental methods and findings. Your answer should be within 120 words.

[Point Allocation] 30 points

[Sample Answer]

The passage depicts chimpanzees as having exceptionally efficient visual working memory. In the task, several Arabic numerals briefly appeared on a monitor; after the first correct touch, the remaining numerals were masked by blank squares. Young chimpanzees still selected the locations in ascending order with high accuracy, even when exposure times were shortened. This indicates rapid, parallel encoding of spatial positions, robust maintenance over short delays, and effective retrieval without verbal rehearsal. Performance patterns also suggest advance action planning: individuals seem to form a sequence plan from a single glance and then execute it. Notably, young chimpanzees outperformed adult humans under identical conditions, highlighting species and developmental differences in visuospatial working memory.

Q2 Describe the idea of the Cognitive Tradeoff Theory proposed by the author. Use the information presented in the passage and explain it clearly in your own words. Your answer should be within 120 words.

[Point Allocation] 30 points

[Sample Answer]

The Cognitive Trade-off Theory argues that human evolution involved a reallocation of limited cognitive resources. Our ancestors, like chimpanzees today, likely possessed strong immediate visuospatial working memory. As language and abstract, symbolic thought expanded, humans experienced a relative reduction in the fidelity or priority of such immediate memory functions. Chimpanzees retained an advantage in "see-and-encode" capacities, whereas humans gained the ability to represent, combine, and share information through symbols. The theory does not claim uniform superiority of one species; rather, it frames a brain-level reorganization shaped by ecological and social demands. In short, enhanced linguistic and imaginative capacities came at a cost to certain rapid, iconic working-memory abilities.

Q3 According to the author, what significance does “a heart of sharing supported by the power of imagination” have in human evolution? Discuss your own thoughts on its meaning and importance. Your answer should be within 120 words.

[Point Allocation] 40 points

[Sample Answer]

A “heart of sharing supported by imagination” underpins uniquely human cultural evolution. Imagination lets us represent absent events, future states, and others’ perspectives; sharing turns those private representations into public goods via language, teaching, and coordinated action. Together they enable cumulative culture: skills and ideas are preserved, improved, and transmitted across generations, building institutions, technologies, and moral norms. This capacity also supports prosocial motivation—empathy, joint commitment, and long-term cooperation—allowing large groups to solve problems beyond any individual’s reach. Compared with chimpanzees’ strengths in immediate visuospatial memory, humans trade speed for symbolism, gaining scalable knowledge systems. Thus, imagination-backed sharing is a primary engine of human adaptation and societal complexity.