Nineteenth International Linguistics Olympiad
Castletown (Isle of Man), July 25–29, 2022
Answer sheet

Team:

| (a) |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|     | 30| 31| 32| 33| 34| 35| 36| 37| 38| 39| 40| 41|   |   |   |   |   |   |   |   |   |   |   |
|     | 42| 43| 44| 45| 46| 47| 48| 49| 50| 51| 52| 53|   |   |   |   |   |   |   |   |   |   |   |

| (d) |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|     | 66| 67| 68| 69| 70| 71| 72| 73| 74| 75| 76| 77|   |   |   |   |   |   |   |   |   |   |   |
|     | 78| 79| 80| 81| 82| 83| 84| 85| 86| 87| 88| 89|   |   |   |   |   |   |   |   |   |   |   |

| (g) |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|     |100|101|102|103|104|105|106|107|108|109|110|111|   |   |   |   |   |   |   |   |   |   |   |
Part I (25 points)

Ch'ŏngŏ Nogŏltæ is a 17th-century Manchu textbook published by the Chosŏn dynasty government of Korea. It features fictional dialogues between a Korean merchant Kim and a Chinese man Wang.

Here is an excerpt from the book and its Roman transcription.
Given below is its English translation:

Wang: ⁷ Mister [lit. big elder brother], where did you⁸ come from?
Kim: ⁹ I came from Wangging of Korea.

Wang: ¹⁰ Now where are [you]⁴ going?
Kim: ¹¹ I am going to the imperial palace [= capital city of China].

Wang: ¹² When did you⁸ depart from Wangging?
Kim: ¹³ I departed at the beginning of this month.

Wang: ¹⁴ You⁸ departed at the beginning of this month, now it has been almost half a month, why have [you] just arrived here?
Kim: ¹⁵ As a friend [of mine] was delayed and coming [late], I was traveling slowly to wait [for him], and because of this [my] coming has taken such a long time.

Wang: ¹⁶ Is that friend now catching up, or not?
Kim: ¹⁷ This is that very friend. [He] came just yesterday.

Wang: ¹⁸ How would I know? If Heaven has mercy [on us], and [our] bodies are sound, [we] will arrive.

Kim: ¹⁹ As to this Korean language of ours, [it’s] used only in the Korean land; if [one] passes Ijeo and arrives at the Chinese lands, everything is only [in] the Chinese language, so when anyone asks something [lit. a word], if [my] eyes vacantly stare and [I] can’t answer, what kind of people would the others see us as?

Wang: ²⁰ So, [that you] study Chinese books — did [you] study of your(sg) own will or did your(sg) parents tell [you] to study?
Kim: ²¹ My parents [lit. our father and mother] told [me] to study, indeed!

Wang: ²² How many years has been your(sg) study?
Kim: ²³ My study has exceeded half a year.
Here are some additional sentences in Manchu from the same book:

30. afaha alban de kiceme yabufi hergen baharangge udu labdu bicibe baharaküngge inu bi
31. aika duleke aniya adali elgiyaha bici gemu jeterengge bufi ulebumbihe
32. amba age sain menggun be bucina ere menggun umesi juken adarama baitalambi
33. be morin be tataha boode ulebum genembi si bithe araha manggi mini tataha boode benju
34. bi inu donjici ere aniya ubade usin jeku be asuru bargiyahakü sembi
35. bi sinde fulu inu burakü komso inu burakü sunja yan oci uthai tob seme teherere hüda
36. booi jasigan tumen yan i aisin salimbi
37. coko hülaha manggi iliʃi uthai yabuki
38. ere honin de enteke mangga hüda be gaiki seci funiyexe sain honin be udu hüda de uncambi
39. gemun hecen i jetere jaka hajo elgiyün
40. gucuse ilicina coko ilanggeri hülafi abka gereme hamika
41. jakün fun menggun de emu hiyase sanyan bele sunja fun menggun de emu hiyase je bele
42. juwe fun menggun de emu ginggin honin yali bumbi sere
43. muse tubade dedume yoki aikabade duleme geneci cargi orin ba i sidende niyalma boo akü
44. niyengniyeri yacin sijigiyan sanyan ceri dorgi etuku be etumbi
45. orho turi gemu bi turi oci sahaliyan turi orho oci jeku orho
46. orho turi haji ba oci ilan duin jiha menggun be baitalambi
47. sain sirgei araha boro genggiyen bocoi suje boro ninggude aisin dingse hadafi etumbi
48. si tere kubun be da bade udu hüda de udafi wang ging de geneʃi udu hüda de uncambi
49. si uttu balai gaire naka bi udu hüdaʃaɾa niyalma waka ocibe ere suje hüda be gemu sambi
50. sini ere geren morin ihan dobori dari jetere orho turi uheri udu jiha baibumbi
51. suweni geren šusai dorgi de nikan i niyalma udu coohiyən i niyalma udu
52. ubaci gemun hecen de isinarangge amba muru sunja tanggú ba funcembi
53. uncara niyalma majige eberemba udara niyalma jai sunja yan be nonggime bu

Given below are their English translations in arbitrary order:

A. Among your(pl) many classmates, how many are Chinese and how many are Korean?
B. Are things to eat scarce or abundant at the imperial palace?
C. For eight fen of silver [they give] one dou of millet; for five fen of silver [they give] one dou of white rice.
D. It is said that for two fen of silver [they] give one jin of lamb meat.
E. Let us go there to sleep. If [we] pass [there], over there are no people or houses in a span of twenty li.
F. Roughly five hundred li are left to arrive at the imperial palace from here.
G. How many qian in total are spent on straw and beans for these many horses and cattle of yours to eat every night?
H. If one is in a place where straw and beans are scarce, one spends three to four qian of silver.
I. At what price do you buy that cotton at the place of origin and then at what price do you sell it when you go to Wangging?

J. There are both straw and beans — the beans are black beans and the straw is straw from crops [lit. ‘crop straw’].

K. Let us wake up and immediately leave after the rooster crows.

L. If we had harvested abundantly like last year, we would have given you all something to eat and fed you.

M. I also heard that, this year, field crops were not much harvested here.

N. Friends, could you wake up? The rooster has crowed three times and the sky has almost become bright.

O. Mister, could you give me good silver? This silver is very flat — how would I use it?

P. A letter from home is worth ten thousand liang of gold.

Q. Seller, reduce the price a bit. Buyer, again add five liang [of silver] and give.

R. If you wish to be paid such an expensive price for this sheep, at what price do you sell a sheep with good wool?

S. You, stop trying to be paid arbitrarily like this. Even though I am not a broker, I know all about this price of silk.

T. I will neither give more nor give less to you. Five liang [of silver] is exactly the right price.

U. We will go to feed the horses at the inn. After you write the document, send it to my inn.

V. Even though those who go to work at the assigned jobs and get [government] positions are very many, there are also those who do not get [a position].

W. We wear blue long-sleeved garments and white gauze inner garments in spring.

X. Hats made of good threads and light-colored silk hats — we rivet gold brooches on top and wear them.

(a) Determine the correct correspondences.

(b) Here are some Manchu sentences from a fictional math textbook featuring conversion of units of measurement and basic operations (+, −, ×). Translate into English:

54. ilan minggan ninggun tanggū jušuru, juwe ba, ishunde teherebumbi
55. orin hule i dorgici emu hule ilan moro hiyase be ekiyebuci, juwan jakūn hule uyun hiyase nadan moro hiyase funcemb
56. ilan tanggū nadanju duin ginggin de jakūn tanggū dehu juwe ginggin be nonggici, bahara ton udu
57. ninju duin fun be tofohon de kamcime bodoci, uyun yan ninggun jiha be bahambi

(c) Write in the Manchu script:

58. manju hergen ‘Manchu script’ 62. tanggū tacikū ‘Tangut school’
59. mongo tala ‘Mongolian steppe’ 63. tiyan ju gurun ‘India’
60. tumen ula ‘Tumen river’ 64. hahu hoton ‘Hohhot’ (city)
61. i i niyalma ‘Yi people’ 65. cicihar hoton ‘Qiqihar’ (city)
Part II (25 points)

The Imperially Commissioned Mirror of the Manchu Language is an 18th-century monolingual Manchu dictionary published by the Qing emperor Kangxi.

Here are some entries from the dictionary:

66. abka ............ umesi den tumen jaka be elbehengge be, abka sembi.
67. alin ............ den amba ningge be, alin sembi.
68. amargi ........... hadaha usiha bisire ergi be, amargi sembi.
69. arašan aga ......... erin de acabume agaha aga be, arašan aga sembi.
70. bolori ........... nadan biya jakūn biya uyun biya tumen jaka bargiyara be, bolori sembi.
71. cecike ........... yaya ajige gasha be, cecike sembi.
72. dosimbi ........... bata be gidame julesi genere be, dosimbi sembi.
73. edun ........... abka na i sukdun selgiyebume dara be, edun sembi.
74. elden ........... šun biya usiha tuwai genggiyen yasa de fosoro be, elden sembi.
75. ergen ........... beye i da sukdun be, ergen sembi.
76. gasha ........... juwe bethe dethe funggala bisirengge be, gasha sembi.
77. hūda ........... udarauncara jakai salute jiha menggun i ton be, hūda sembi.
78. ilha ........... yaya orho moo i bongko ci fushume ilakangge be, gemu ilha sembi.
79. mergen ........... sure dacun nyalma be, mergen sembi.
80. nadan usiha ... amargi de bisire nadan amba usiha be, nadan usiha sembi.
81. nimaha ........... muke de banjiha esihengge jergi jaka be, nimaha sembi.
82. nyalma ........... abkai banjibuha tumen ergengge i dorgi umesi surengge be, nyalma sembi.
83. sahaliyan ........... umesi yacin be, sahaliyan sembi.
84. se ........... orhoda i cikten da i acan i sidende banjiha jalan be, se sembi.
85. šun ........... inenggi tucifi gubci abka na de eldekengge be, šun sembi.
86. tanggū ........... juwe susai be, tanggū sembi.
87. ulden ........... alin jakarara ongsoletucire elden be, ulden sabumbi sembi.
88. usiha ........... dobori abka de sarafi, emke emken i elden bisirengge be, usiha sembi.
89. wargi ........... šun dosire ergi be, wargi sembi.

Given below are their English translations in arbitrary order:

A. sky ..................... That which is the highest, and covers all kinds of things is called “sky”.
B. light of dawn .......... [When] the light emerges before the mountains are differentiated, [it is] said that “the light of dawn is seen”.
C. sun ..................... That which emerges by day and illuminates the whole sky and the earth is called “sun”.
D. light ..................... [That which] is of the sun, the moon, the stars, and fire, and is bright and stings at the eye is called “light”.
E. **Big Dipper**........ The seven big stars that are in the north are called “Big Dipper”.

\[ 
\text{[Diagram of Big Dipper]} 
\]

F. **much-needed rain**. The rain raining at the right moment is called “much-needed rain”.

G. **wind**. 
\[ \text{[That which] blows to spread the spirit of the sky and the earth is called “wind”}. \]

H. **autumn**. 
\[ (i) \]

I. **mountain**. Tall and big things are called “mountains”.

J. **west**. 
\[ (ii) \]

K. **north**. The direction where the North star exists is called “north”.

L. **hundred**. 
\[ (iii) \]

M. **to progress**. Going forward while smashing enemies is called “to progress”.

N. **star**. Those which are spread over the night sky, and each and every one of which has light are called “stars”.

O. **human**. 
\[ (iv) \]

P. **breath**. The basic spirit of the body is called “breath”.

Q. **sage**. A clever, sharp person is called “sage”.

R. **price**. 
\[ (v) \]

S. **black**. 
\[ (vi) \]

T. **ginseng head**. A node that is created where the stem and root of ginseng meet is called “ginseng head”.

\[ 
\text{[Diagram of ginseng and ginseng head]} 
\]

U. **flower**. Things which unfurl into blossom from the buds of any grass or tree are all called “flowers”.

V. **bird**. That which has two legs, feathers, and a tail is called “bird”.

W. **chick**. Any small birds are called “chick”.

X. **fish**. Various sorts of things living in water and having scales are called “fish”.

(d) Determine the correct correspondences.

(e) Fill in the blanks (i–vi).
Part III (25 points)

Suppose you are a group of Manchu-speaking merchants from the Qing dynasty. Your price list is given below:

\[
\begin{align*}
\text{uncara jaka} & \\
\{ & \\
\text{– jeterengge} \\
& \text{šanyan bele .......... emu hiyase de nadan fun menggun} \\
& \text{coko yali ...... emu ginggin de emu jiha sunja fun menggun} \\
\} & \\
\text{– etuku} & \\
& \text{ilhangga sijigiyan ................. duin yan menggun} \\
& \text{sahältian tulergi etuku ................ ilan yan menggun} \\
& \text{šanyan kubun dorgi etuku ........... tofohon jiha menggun} \\
& \text{coohiyan ci jihe orhoda ..... orin ginggin de juwan yan menggun} \\
& \text{aisin i jodoho suje .............. emu jušuru de sunja yan menggun} \\
& \text{funiyehe sain honin ................. juwan juwe yan menggun} \\
\text{udara jaka} & \\
\{ & \\
\}
\end{align*}
\]

(f) Answer the following questions from your customers in Manchu using the Manchu script:

90. 91. 92. 93. 94. 95. 96. 97. 98. 99.
Part IV (25 points)

Here are some transcriptions of utterances in Modern Manchu recorded in the 21st century and their English translations in arbitrary order:

100. bi bəl wančal ba da bəla udaxə
101. bo molin jolum jixəniŋŋə
102. aninŋ ja axi odun
103. aninŋ sjən lod njəm jixə
104. gimu xačən da tuli alin da niminŋ gjak amba
105. jo alin ilan alin al sigdən da bi bitk saxə
106. masa čumaxə ambada bitk xolal ba da jom
107. owu dili xaalbin innama sjanjən aisa gwajdam
108. si siskə buda jam wajama utka bo wul walin jixə
109. so učuluxə bo učula ako
110. təla sim manŋə ambada fakjixə
111. tasa alə bitki ba manda buxo

A. It snows very heavily in Beijing in the winter season.
B. Between 2 o’clock and 3 o’clock I read [past tense] a book.
C. I bought rice at the rice market.
D. We came on horseback [lit. riding horses].
E. We will go to school together tomorrow.
F. You.sg returned home right after eating a meal yesterday.
G. You.pl sang but we did not sing.
H. Very many people came today.
I. He went together with you.sg.
J. They gave us this book.
K. In which direction is the wind today?
L. How long does it take to get from here to Harbin by car?

(g) Determine the correct correspondences.

(h) Translate into English:

112. mində jašixan bo!
113. təla ambə njam waŋə
114. siskə majixə axə axaxə
115. bi iči dolxi otuku udaxə
116. aninŋ tasa alin da čičika sawəxə
117. anjə nimaxə jam amə xoni jali jam
118. bo čumaxə čičikal xotun da jom, so jawə da jom?
119. bi jwən ani oŋŋulo gimu kačən da banjixə bixa
Manchu belongs to the Tungusic family. It was spoken by the Manchu tribes in the historical region of Manchuria in Northeast Asia. It was one of the official languages of the Qing empire, which was founded by the Manchus. With the passing of time, Manchu has been gradually replaced by Chinese, leaving only a few dozen native speakers in the current days.

Chinese belongs to the Sino-Tibetan family. Mandarin is a variety of Chinese that was the common spoken language of government officials during the Ming and Qing dynasties.

(Manchu) $c \approx ch$ in church; $j \approx j$ in judge; $\check{s} = sh$ in sheesh; $h = \text{ch}$ in German Bach or $j$ in Spanish jalapeño; $ng = ng$ in hang; $y = y$ in you; $\check{u}$ is a vowel.

$\check{c}, j, \check{s}, x, \eta, j$ (Modern Manchu) $\approx c, j, \check{s}, h, ng, y$ (Manchu). $a = a$ in comma. A doubled letter denotes length.

The following Chinese units of measurement were used in the Qing dynasty:

<table>
<thead>
<tr>
<th>Unit</th>
<th>Length: 1 li = 1800 chi ($\approx 1890$ ft.)</th>
<th>1 chi = 10 cun ($\approx 12.6$ in.)</th>
<th>1 li = 16 liang ($\approx 1.32$ lb.)</th>
<th>1 liang = 10 qian = 100 fen ($\approx 1.32$ oz.)</th>
<th>1 shi = 10 dou ($\approx 27.4$ gal.)</th>
<th>1 dou = 10 sheng ($\approx 2.74$ gal.)</th>
</tr>
</thead>
</table>

—Minkyu Kim

**Editors:** Samuel Ahmed (editor-in-chief), Ivan Derzhanski (technical editor), Hugh Dobbs, Shinjini Ghosh, Stanislav Gurevich, Gabrijela Hladnik, Minkyu Kim, Yuyang Liu, Bruno L’Astorina, Liam McKnight, Dan Mirea, Aleksejs Peggèvs, Jan Petr, Przemysław Podleśny, Milena Veneva, Elysia Warner.

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Good luck!