

## **i Instructions**

**UNIVERSITY OF OSLO  
FACULTY OF HUMANITIES**

**EXAM - Autumn 2018**

**LING1111 Phonetics and phonology 1**

Time: 17 December 2018 at 13:30-17:30 (4 hours)

Your answers will be saved automatically every 15 seconds. You may navigate between the different questions at any time, but make sure you submit each answer in connection with the right question!

No aids allowed.

Results will be posted in StudentWeb by 10 January 2019.

This exam consists of six questions. Please answer **all** six questions.

If you should encounter challenges, try to answer as much as you can. Partial credit may be given.

Please pay attention to the instructions and read all questions carefully.

Two questions (5 and 6) require you to do **hand drawings on a sheet of paper**.

You may answer in English or Norwegian.

## 1 Phonemic analysis (Allophone problem)

Please determine the distribution of the bilabial stop [m] and the nasal glide [w̃] in Gosiute (Uto-Aztecan, Numic). Are they phonemes or allophones?

Please explain how you arrived at your answer in a step-by-step manner (e.g., the way we did in class). Be as explicit as possible. (Scroll down all the way for special characters.)

### Distribution of [m] vs. [w̃] in Gosiute

[moppo] 'mosquito'	[kammu] 'jackrabbit'
[sɪmmɪ] 'one'	[kuh̃w̃a] 'husband'
[puih̃w̃ai] 'with an eye'	[ɪmbia] 'your(sg) mother'
[t̃θo:mbai] 'have beads'	[yɪw̃ɪ] 'to swallow'
[iw̃a:] 'morning'	[ponaih̃w̃ai] 'with the mouse'
[t̃θuw̃ekku] 'okay'	[sumba:rɪu] 'to learn something'
[t̃θo:mmai] 'with the bead'	[kah̃r̃iɪw̃ai] 'with the house'
[taw̃a] 'tooth'	[meɔ] 'cricket'

Fill in your answer here

Format | **B** | *I* | U | x<sub>2</sub> | x<sup>2</sup> | *I*<sub>x</sub> | | | | | | | | | | |

Words: 0

If you require special characters, you can copy and paste them from the following line.

(Select with left mouse button. Use Ctrl+C (PC) or cmd+C (Mac) to copy. Use Ctrl+V (PC) or cmd+V (Mac) to insert.)

ɪ w̃ t̃ θ r̃ ð : → [ ] # \_ /

(Note: you will not need all of these characters, so please do not be misled by the selection.)

If you need special characters that are missing, feel free to write it in words.

Maximum marks: 0

Attaching sketches to this question?

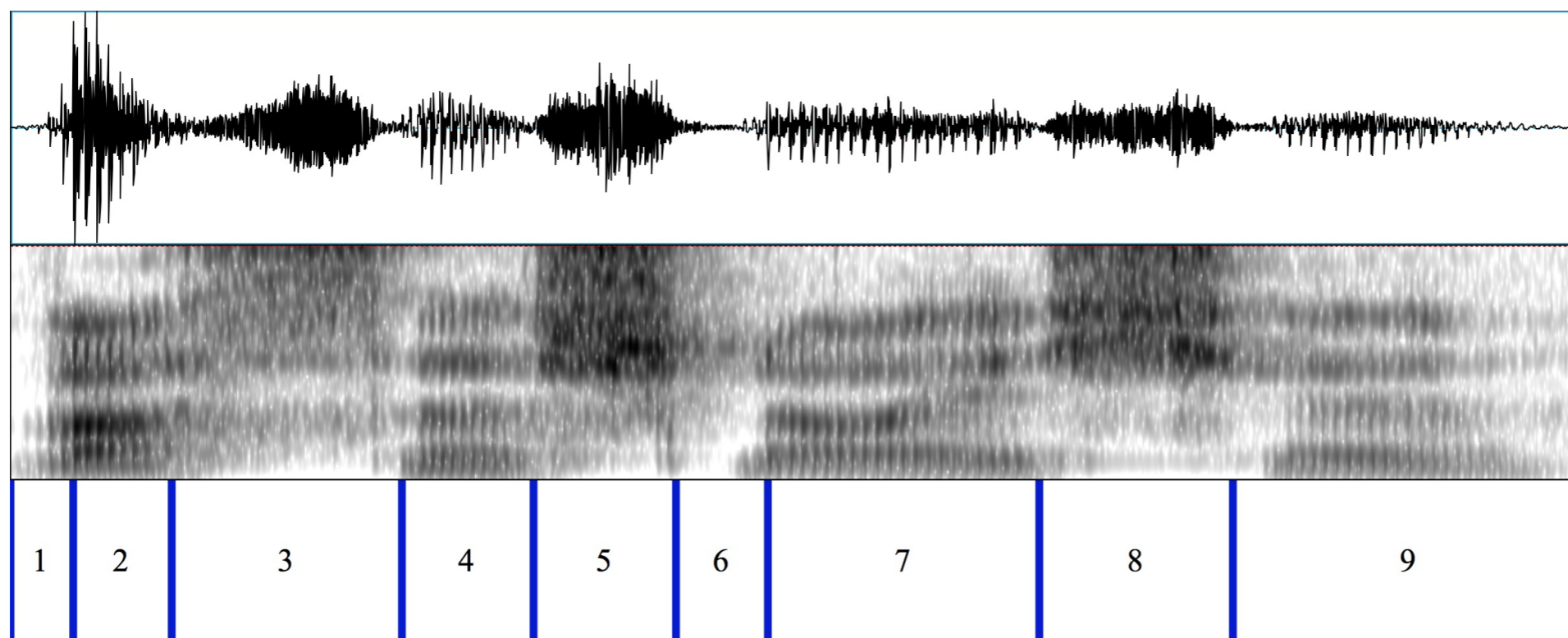
Use the following code:

**XXXXXXXXXX**

## 2 Waveform and spectrogram analysis

The picture below shows the waveform and spectrogram of a German word.

In your own words, please answer the following questions (given below the picture).



[a.] How can you recognize voiceless fricatives in a spectrogram and how does this reflect their manner of articulation? (Please write complete sentences, and be explicit.)

[b.] I have numbered the segments in this picture; please specify which segments are *voiceless fricatives*, and which segments are *vowels*. (You can ignore all segments that are neither voiceless fricatives nor vowels, but feel free to comment on them.) You may answer in keywords, but please make sure your answer is explicit enough for an evaluator to understand what you intended.

[c.] Please state how many syllables there are in this word, and state which of the segments are syllable nuclei.

(You are not required to guess what the word is and you will not need IPA symbols.)

Fill in your answer here

Format | B | I | U |  $x_2$  |  $x^2$  |  $I_x$  | | | | | | |  $\Omega$  | | |  $\Sigma$  | ABC |

Words: 0

Maximum marks: 0

Attaching sketches to this question?

Use the following code:

**XXXXXXXXXX**

### 3 Formant analysis

The measurements below correspond to the average formant values for four vowels, as pronounced by female speakers of Kabardian (a Northwest Caucasian language spoken primarily in Russia and Turkey), cited from a recent paper by Matthew Gordon and Ayla Applebaum.

[a.] Please explain what kind of information we can infer from these measurements. (Please write complete sentences, and be explicit.)

[b.] Then, describe the four vowels in your own words (e.g., write sentences such as “The F1 difference between Vowel 1 and Vowel 2 indicates that ...”, and “Based on ..., Vowel ... could be a high central vowel.”)

[c.] It may not be possible to determine exactly which vowels these are (e.g., whether they are tense or lax), but please state for each vowel one or more examples of a vowel that it could be (e.g., “This vowel could be an [e] or an [ø].”).

(Scroll down all the way for special characters.)

<b>Vowel 1</b>	
F1 = 430 Hz	
F2 = 2286 Hz	(F2–F1 difference = 1856 Hz)

<b>Vowel 2</b>	
F1 = 575 Hz	
F2 = 2043 Hz	(F2–F1 difference = 1468 Hz)

<b>Vowel 3</b>	
F1 = 824 Hz	
F2 = 1514 Hz	(F2–F1 difference = 690 Hz)

<b>Vowel 4</b>	
F1 = 444 Hz	
F2 = 1201 Hz	(F2–F1 difference = 757 Hz)

Fill in your answer here

Format | **B** | *I* | U |  $x_2$  |  $x^2$  |  $\int_x$  | | | | | | | | | | | |

Words: 0

If you require special characters, you can copy and paste them from the following line.

(Select with left mouse button. Use Ctrl+C (PC) or cmd+C (Mac) to copy. Use Ctrl+V (PC) or cmd+V (Mac) to insert.)

ɑ	ɛ	ɒ	ə	ə	ɛ	ɜ	ɪ	ɨ	θ	ɔ	ɔ	œ	ʊ	ɸ	ʌ	ʊ	ɣ
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

(Note: you will not need all of these characters, so please do not be misled by the selection.)

If you need special characters that are missing, feel free to write it in words.

Maximum marks: 0

**Attaching sketches to this question?**

Use the following code:

**XXXXXXXXXX**

#### 4 Basics of articulation

In your own words, please explain the difference between active articulators and passive articulators. In your answer, please address, in particular, the following two points:

[a.] How do we classify the lower lip and the upper lip, and why?

[b.] The soft palate (velum) is typically classified as a passive articulator. Please explain why this classification may be seen as problematic. Describe when the velum is passive, and when it is active.

Provide concrete examples of sounds that are relevant for this discussion. You are not required to use IPA symbols (as long as your prose is sufficiently precise). If you wish to include IPA symbols, you can copy and paste them from the embedded PDF file. (Scroll down for instructions.)

**Fill in your answer here**

Format | **B** | *I* | U |  $x_2$  |  $x^2$  |  $I_x$  | | | | | | | | | | | |

Words: 0

To copy and paste IPA symbols: Use the left mouse button to select symbols; make a selection slightly "above" the symbol that you want. Zoom in if needed.

To copy: Ctrl+C (PC), cmd+C (Mac).

To insert: Ctrl+V (PC), cmd+V (Mac).

Maximum marks: 0

**Attaching sketches to this question?**

Use the following code:

**XXXXXXXXXX**

## 5 Phonological processes and their triggers

Please use the hand-drawing sheets that you received from the examination staff.

Please make sure to fill in the question code correctly. (7-digit code for this question provided below.)

This question has two parts. You will write into the online form for the first part and use the hand-drawing sheets for the second part.

[a.] In your own words, please explain the OCP. Then, consider the following six Latin words. (The IPA transcription is given for the Classical Latin pronunciation.) Name the phonological process that they illustrate, and describe it in your own words. Then explain how the OCP can be used to explain this phonological process.

Please use the online form below for this part.

[b.] Please sketch an autosegmental analysis of the three Latin words *totalis*, *lateralis*, and *lunaris*.

Please use the hand-drawing sheets for this part.

vocalis	/wo:ka:lis/	'of the voice'	see English <i>vocal</i>
totalis	/to:ta:lis/	'of the whole'	see English <i>total</i>
littoralis	/li:ttora:lis/	'of the seashore'	see English <i>littoral</i>
lateralis	/latera:lis/	'of the side'	see English <i>lateral</i>
lunaris	/lu:na:ris/	'of the moon'	see English <i>lunar</i>
popularis	/popula:ris/	'of the people'	see English <i>popular</i>

Fill in your answer here

Format | B | I | U | x<sub>2</sub> | x<sup>2</sup> | I<sub>x</sub> | 📄 | 📂 | ↶ | ↷ | ↺ | ☰ | ☷ | Ω | 📊 | ✎ | Σ | ABC | ✖

Words: 0

Maximum marks: 0

Attaching sketches to this question?

Use the following code:

**XXXXXXXXXX**

## 6 Syllable structure

Please use the hand-drawing sheets that you received from the examination staff.

Please make sure to fill in the question code correctly. (7-digit code for this question provided below.)

This question has two parts. You will use the hand-drawing sheets for the first part and write into the online form for the second part.

[a.] Analyze the syllable structure of the Norwegian word *verdensmester* 'world champion' in Onset-Nucleus-Coda representation by drawing a diagram. Please use the hand drawing sheets for this, and use your own pronunciation of the word. (In your diagram, please use IPA transcription when you write the sounds that are in the word.)

**Please use the hand-drawing sheets for this part.**

[b.] In your own words, please explain the principle of sonority, based on the example word *verdensmester* 'world champion'.

**Please use the online form below for this part.**

Fill in your answer here

Format | **B** | *I* | U |  $x_2$  |  $x^2$  |  $\int_x$  | | | | | | | | | | | ABC |

Words: 0

Maximum marks: 0

Attaching sketches to this question?

Use the following code:

**XXXXXXXXXX**

Konsonanter							
β	ḅ	B	ç	ç	ð	ḑ	Ḓ
ḑ	Ḓ	g	G	h	ḥ	ḵ	Ḷ
f	ḧ	ḩ	L	l	ḷ	ḽ	ḿ
ḽ	N	ḱ	ϕ	r	Ṛ	Ṝ	Ṟ
R	ṛ	ṛ	ṣ	ṣ	θ	ṭḥ	ṭṣ
ṭ	ṭ	ṭ	ṭ	χ	Ḷ	Ṝ	Ṟ
ṛ	ṛ						
Vokaler							
ɑ	æ	ɒ	ə	ɘ	ɛ	ɜ	
ɪ	ɨ	ɵ	ɜ	ɔ	œ		
œ	ʊ	ʉ	ʌ	ʍ	ʏ		
Diakritika							
h	w	j	ʏ	ː			
1	2	ı	ı̇	ṛ			