

UNIVERSITY OF TORONTO
Faculty of Arts and Science

DECEMBER 2008 EXAMINATIONS
LIN 228H1F

Duration – 2 hours
No Aids Allowed

PLEASE HAND IN

Given Name: _____ Family Name: _____

Student Number:

Page	Possible Points	Points Earned
2	12	
3	18	
4	7	
5	13	
6	19	
7	21	
8	8	
9	15	
Total	113	

Important instructions:

Write all responses LEGIBLY. Use only the symbols employed in this course. For English, use a broad transcription of Canadian English (as described in the text), unless specified otherwise. The value of each question is indicated in parentheses. Do not expose your responses to other students at any time during the exam.

1. (12 points) Make a line drawing for each word, focusing on the details indicated in narrow transcription. Please draw vertical lines to show clearly the timing between different articulations.

a. *optometrist* [,ɑ p p t̪ ˈt̪ h̩ ũ m ɛ t̪ ɹ ɪ s t]

LABIAL	
CORONAL	
DORSAL	
VELIC	
GLOTTAL	

b. *scammed* [s k æ m d d]

LABIAL	
CORONAL	
DORSAL	
VELIC	
GLOTTAL	

2. (6 points) List three auditory properties that correlate with stress in English. For each one, name corresponding acoustic properties that can be identified on a spectrogram.

	<i>auditory properties</i>	<i>acoustic properties</i>
a.	_____	_____
b.	_____	_____
c.	_____	_____

6

3. (12 points) For each of the sounds below:

- i. If the sound is not possible, circle the letter to the left of its description.
- ii. For possible sounds which have a symbol, put the symbol in the brackets at the right.
- iii. For possible sounds for which there is no symbol, put an asterisk in the brackets.

- | | |
|--|----------------|
| a. glottalic egressive velar stop | [] |
| b. pulmonic egressive breathy voiced bilabial fricative | [] |
| c. pulmonic egressive voiced nasalised lateral fricative | [] |
| d. pulmonic egressive voiced nasal glottal stop | [] |
| e. pulmonic ingressive voiced uvular fricative | [] |
| f. velaric egressive voiced nasal palatal stop | [] |

12

4. (7 points) Multiple choice. Choose the BEST answer. There is only one correct answer per question.

The absolute limit of how narrow a transcription can be is controlled by

- a. the amount of detail included
- b. the limits of human hearing
- c. the contrasts in the phonemic inventory
- d. the amount of detail under consideration at the moment

Unrounding has the following effect on formants of vowels

- a. lowering, particularly for F1
- b. lowering, particularly for F2
- c. raising, particularly for F1
- d. raising, particularly for F2

Retroflex consonants are made with

- a. a velaric airstream
- b. the underside of the tip of the tongue
- d. the blade of the tongue
- c. the root of the tongue

During the sounds generally described as implosives, the vocal folds are:

- a. rising and vibrating
- b. falling and vibrating
- c. falling and closed
- d. rising and closed

In comparison with [d], [ɾ] is

- a. shorter
- b. ballistic
- c. voiced
- d. shorter and voiced
- e. voiced and ballistic
- f. shorter and ballistic

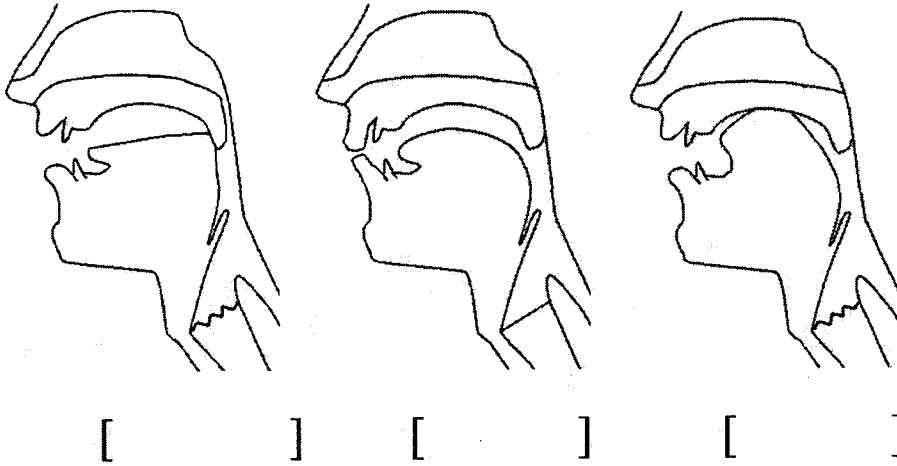
The statement *The VOT of /k/ is 21 ms* means that

- a. voicing onset occurs 21 ms after the onset of the stop
- b. voicing onset occurs 21 ms before the release of the stop
- c. voicing onset occurs 21 ms after the release of the stop
- d. voicing offset occurs 21 ms after the release of the stop
- e. voicing onset occurs 21 ms before the onset of the stop

Starting with the cardinal vowel /u/ what would be the acoustic effect of moving to a nearby vowel /o/?

- a. F1 and F2 are lowered
- b. F1 and F2 are raised
- c. F1 is lowered and F2 is raised
- d. F1 is raised and F2 is lowered

5. (3 points) Provide the IPA symbol for each of the sagittal sections below.



3

6. (5 points) True or False. Place T before the true statements and F before the false ones.

- ___ With the ingressive velaric airstream, the vocal folds are held tightly together and move downwards lowering the air pressure in the vocal tract.
- ___ Front rounded vowels are more common in languages than back rounded vowels.
- ___ Unaspirated stops in English occur after /s/ and at the end of a word.
- ___ During the glide portion of a falling diphthong, the tongue moves from a higher to a lower position in the mouth.
- ___ A downstepped high tone is slightly lower than the previous high tone.

5

7. (2 points) What role do the higher formants such as F4 and F5 play in communication?

8. (2 points) Of a given complex wave, the frequency of the second harmonic is 220 Hz; what is the frequency of the third harmonic?

_____ Hz

9. (1 point) Czech has an alveolar fricative trill. How would you symbolize it? _____

5

10. (12 points) The following sentence is divided into two phrases. Transcribe each phrase using both broad (as defined in class) and narrow transcription (all allophonic variation in consonants and vowels discussed in class). Mark *one* primary stress and any additional secondary stresses in each phrase, both in broad and narrow transcription. Pay particular attention to levels of stress and to the difference between full and reduced vowels. Pay attention to strong and weak forms (use weak forms whenever appropriate). Mark length of stressed vowels in narrow transcription.

The North Wind and the Sun

/ _____ /

[_____]

were disputing which was the stronger.

/ _____ /

[_____]

12

11. (4 points) Provide a syllable diagram for the following word.

/ ɪ æ s p ɪ ' ɪ eɪ ʃ ŋ /

4

12. (3 points) Provide examples of voiceless stops having (a) simple articulation, (b) secondary articulation, and (c) double articulation. For each, show symbols using labial and palatal as possible places of articulation.

a.

b.

c.

3

13. (8 points) Gradual changes. Apply each rule in succession to the output of the preceding rule. Give the resulting form.

Start with

[' ts ø j m^w ɔ̃ χ i:]

1. lower vowels one notch
2. stress the penultimate syllable
3. unround all sounds
4. reverse voicing of obstruents
5. reverse syllabicity of diphthongs
6. denasalize all nasal sounds

[_____]

8

14. (5 points)

Provide a broad transcription (as defined in class) for the English word whose production is described in the text below.

The lips come together to form a complete closure; no air is going through the nasal passage; the vocal folds are vibrating. Then the lips move apart; the apex rises to just behind the alveolar ridge, but not quite touching. Then the apex goes down, and the tongue assumes a high front position, forming a relatively wide constriction (the vowel is lax). Then the back of the tongue rises to touch the velum; the vocal folds cease to vibrate. Then the back of the tongue is lowered, and the lamina rises towards the alveolar ridge making a narrow constriction. The velum remains raised throughout the word.

/ _____ /

5

15. (4 points) Fill in the blanks with nasals homorganic to the following consonants:

a. _____ f

b. _____ w

c. _____ d

d. _____ j

Some of these sequences are characterized by the following acoustic properties of a preceding vowel (assume /a/). Identify each of the sequences by circling the appropriate letters.

F2 is the highest before the sequence in

a. b. c. d.

F2 is the lowest before the sequence in

a. b. c. d.

F3 is the lowest before the sequence in

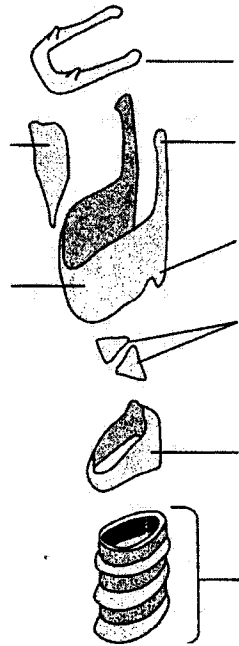
a. b. c. d.

F1 and F2 come together before the sequence in

a. b. c. d.

8

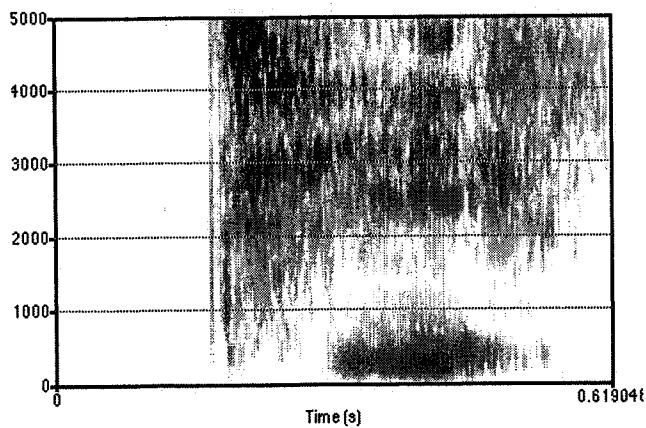
16. (8 points) On the following drawing, lines point to various parts of the larynx (8 in total). At the end of each line, write the name of that part of the larynx.



8

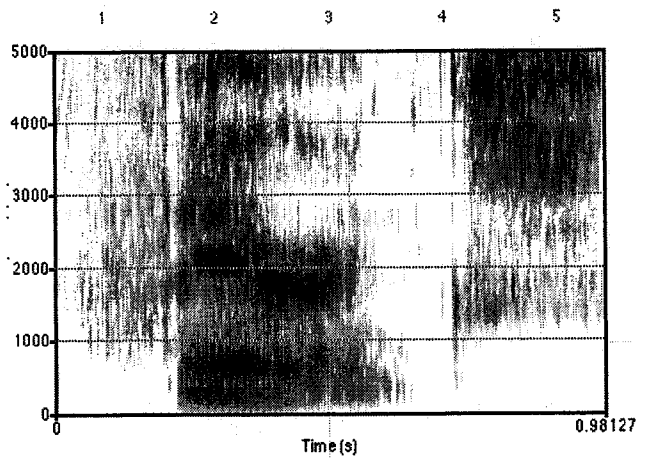
17. (15 points) The spectrograms below show five of the vocal anatomy terms listed below. They are in no particular order. For each spectrogram, give a broad transcription of the term it represents. Align the transcription as closely as possible with the spectrogram, indicating segment boundaries by vertical lines.

apex, teeth, lips, palate, velum, pharynx, blade, uvula, nasal cavity, oral cavity



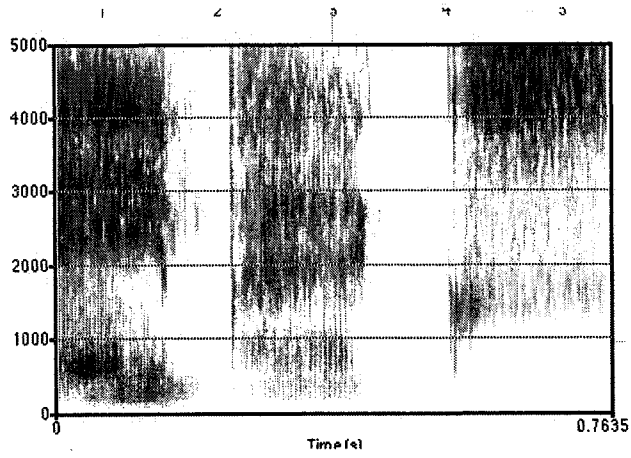
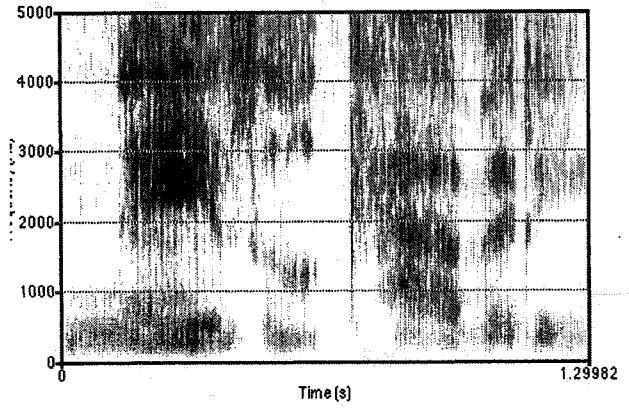
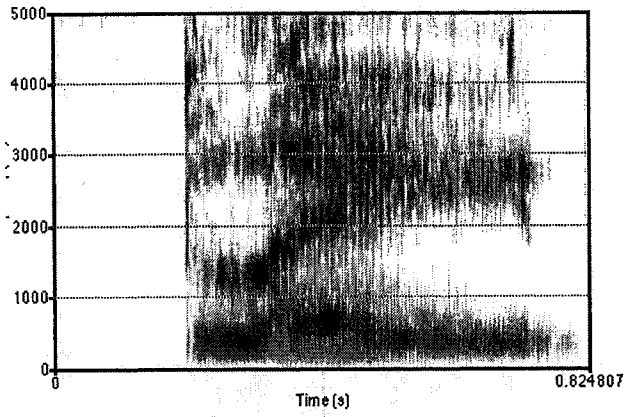
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END