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The questions sum up to 80 points. You get 20 points just for submitting the exam. (Total = 100 pts)

The midterm exam is due on Monday, May 11 at 8AM. No late submission will be allowed.

We can answer to clarification questions via email until Friday, May 8 at 6PM. After that, we'll not answer to any questions regarding the exam.

You can either handwrite your answer and scan it or type directly on the .pdf file.

1 Short Answer (10 pts)

- (1) Please explain why phonologists posit abstract underlying representations for words.

Phonologists posit abstract underlying representations for words to show that phonemes have an essential, characteristic form which is altered in particular contexts by various phonological rules, applying in a derivation.

2 Contrast and allophones (20 pts)

The following data from Ganda exemplify the complementary distribution of [r] and [l].

						[l]	[r]
kola	'do'	wulira	'hear'	oluganda	'Ganda language'		
wawa:bira	'accuse'	olulimi	'tongue'	lagira	'command'	0-a	i-a
ebendera	'flag'	lu:la	'ruler'	le:rwe	'railway'	a-i	e-a
sa:fali	'safari'	lwana	'lwana'	be:ra	'help'	u-i	e-j
bu:lira	'tell'	ɕukira	'remember'	lja	'eat'	o-e	e-i
erjato	'canoe'	lu:la	'sit'	omuliro	'fire'	v-i	i-i
omugole	'bride'	effirimbi	'whistle'	lumonde	'sweet potato'	o-u	i-o
emme:ri	'ship'	eddwaliro	'hospital'	eraddu	'lightning'	#-	e-w
						v-a	

- (2) State a generalization about where [r] and [l] are found.

[l] is found in word-initial positions, and both [l] and [r] are found in between vowels.

- (3) Which allophone is more basic (= underlying form) in Ganda, [r] or [l]? Explain your answer.

[l] is more basic, since it is found in the more general environments (at the beginning of words, after a variety of vowels), while [r] is found after front, tense vowels.

- (4) What are the underlying representations for:

'sit' lu:la 'whistle' effirimbi 'accuse' wawa:bira 'command' lagira

- (5) Write a rule for deriving the distribution of Ganda liquids. Use distinctive features.

$[+lateral] \rightarrow [+trill]$
 $([l]) \rightarrow ([r])$ / $\left[\begin{array}{l} +syllabic \\ +front \\ +tense \end{array} \right]$

3 Underlying representations (25 pts)

The following words are some examples of numerals in Tibetan.

ཅིག	'one'	ཅུ	'ten'	ཅུར་གཅུ	'nineteen'
ཉི	'four'	ཅུ་གཅུ་ཅིག	'eleven'	ཉི་བཅུ་གཅུ	'forty'
ཉལ	'five'	ཅུ་བཅུ་ཉི	'fourteen'	ཉལ་བཅུ་གཅུ	'fifty'
གུ	'nine'	ཅུ་ཉལ	'fifteen'	གུ་བཅུ་གཅུ	'ninety'

(6) What kind of syllables does Tibetan have? State schematically using the C/V bracket notation (as in "(C)VC").

(C)CV(C)

(7) What is the order of morphemes in Tibetan numerals for teens (e.g., 14) and for multiples of ten (e.g., 40)?

"14" 10 + X where X is a number from 1 to 9. (10 4)
 "40" X + 10 where X is a number from 1 to 9. (4 10)
(really "times" 10)

(8) State a descriptive generalization about the phonological alternation you see in this problem.

/tʃu/ occurs in word-initial positions, and /bɔʃu/ occurs elsewhere (in non-word initial positions).

(9) What are the underlying representations and allomorphs for:

	UR	Allomorphs
'one'	gɔʃig	ɔʃig
'ten'	bɔʃu	ɔʃu
'four'	si	si
'five'	ŋa	ŋa
'nine'	rgu	gu

(10) Write the rule that derives this pattern.

Consonant Cluster Deletion

[+consonantal] → ∅ / # _____ C

4 Rules and rule interactions (25 pts)

The following paradigms from Catalan (simplified for this question) show evidence of two rules.

Masc sg	Fem sg	Gloss	Masc sg	Fem sg	Gloss
əkəl	əkələ	'that'	səyu	səyurə	'sure'
nu	nuə	'nude'	sərəðo	sərəðorə	'reaper'
ʃop	ʃopə	'drenched'	siβil	siβilə	'civil'
əspes	əspesə	'thick'	fər	fərtə	'strong'
baf	bafə	'short'	sor	sorðə	'deaf'
tot	totə	'all'	san	santə	'saint'
pək	pəkə	'little'	əlβi	əlβinə	'albino'
mal	malə	'bad'	pla	plənə	'level'
kru	kruə	'raw'	sərə	sərənə	'calm'
əskep	əskepə	'shy'	al	altə	'tall'
sek	sekə	'dry'	prufun	prufundə	'deep'
gros	grosə	'large'	kur	kurtə	'short'
koʃ	koʃə	'lame'	ber	berðə	'green'
brut	brutə	'dirty'	kəlen	kələntə	'hot'
suβlim	suβlimə	'sublime'	fəkun	fəkundə	'bad'
maksim	maksimə	'maximal'	dəsen	dəsəntə	'decent'

(11) What are the underlying representations for the masculine forms of:

'all' tot 'sure' sɛyur 'civil' siβil
 'strong' fərtə 'level' plən 'deep' prufund

(12) State the two rules of Catalan in prose.

Rule 1: Word-final, non-lateral alveolar sonorants are deleted.

Rule 2: Word-final non-strident, non-sonorants that follow consonantal sonorants are deleted.

(13) Now formalize your two rules in terms of distinctive features, and give them names.

	Name of the rule	Rule with distinctive features
Rule 1	Nasal Deletion	$\left[\begin{array}{l} +\text{sonorant} \\ +\text{alveolar} \\ -\text{lateral} \end{array} \right] \rightarrow \emptyset / _ \#$
Rule 2	Post-Sonorant Deletion	$\left[\begin{array}{l} +\text{strident} \\ -\text{sonorant} \end{array} \right] \rightarrow \emptyset / \left[\begin{array}{l} +\text{sonorant} \\ +\text{consonantal} \end{array} \right] _ \#$

(continue on next page)

- (14) How are these rules ordered with respect to each other? Support your answer with a derivation for masculine forms of 'all', 'sure', 'civil', and 'strong' below. What kind of interaction is this?

	'all (masc.)'	'sure (masc.)'	'civil (masc.)'	'strong(masc.)'
UR	tot	səyur	sɪβil	fɔrt
Alveolar Sonorant Deletion	—	səyʊ	—	—
Post-Sonorant Deletion	—	—	—	fɔr
Surface form	tot	səyʊ	sɪβil	fɔr

Rule ordering type: Counterfeeding

- (15) Now, show a derivation with the opposite (incorrect) order and give the hypothesized surface forms that the opposite (incorrect) order would produce. What kind of interaction is this?

	'all (masc.)'	'sure (masc.)'	'civil (masc.)'	'strong(masc.)'
UR	tot	səyur	sɪβil	fɔrt
Post-Sonorant Deletion	—	—	—	fɔrt
Alveolar Sonorant Deletion	—	səyʊ	—	*fɔ
Surface form	tot	səyʊ	sɪβil	*fɔ

Rule ordering type: Feeding