Final Exam Phonology

General Instructions:

- You can co-operate to work on the exam. But you have to write-up your answers individually.
- All answer sheets must be handwritten.
- Write your name and student number on your answer sheets.
- You can answer the questions in any order. However, write down the correct number and language of each question.
- Only write-up what the questions ask you to do. Do not include things like distribution tables, etc., they will not add to your grade.

Deadline:

- **Friday, January 11, 2013**
- Submit exams to Ms. Ambar or Mr. Ahlis at the Linguistic Program Office.
Part A

1. Translate the following sound changes into distinctive features. Write the specific distinctive features that specify the initial sound and then write all the features that are changed for the final sound.

   a)  p --> f
   b)  t --> n
   c)  o --> w
   d)  k --> s
   e)  s --> t
   f)  a --> i

2. Formalize the following rules using distinctive features. Note, in IPA j = y.

   a)  b,d,g --> β, δ, γ / V _____
   b)  p,k,q --> β, γ, θ / V _____
   c)  ø --> j / i, e _____ o, u, a
   d)  t --> s / ___ i
Part B

I. Greek

Examine the sounds [x,k,ç,c] in the following data. [x] is a voiceless velar fricative, [ç] is a voiceless palatal fricative, and [c] a voiceless palatal stop.

1. [kano] 'do'
2. [xano] 'lose'
3. [çino] 'pour'
4. [cino] 'move'
5. [kali] 'charms'
6. [xali] 'plight'
7. [çeli] 'eel'
8. [çeri] 'candle'
9. [çeri] 'hand'
10. [kori] 'daughter'
11. [xori] 'dances'
12. [xrima] 'money'
13. [krima] 'shame'
14. [xufta] 'handful'
15. [kufeta] 'bonbons'
16. [oci] 'no'
17. [oci] '2.82 pounds'

1) Which sounds are separate phonemes and which sounds are allophones? Draw the phoneme - allophone hierarchy in diagram form like in the example below (you may need to modify this example).

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  / /
 /   \
 [ ]   [ ]
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2) What are the phonological rules that explain the distribution of these sounds? If you can write out the rules in distinctive features, you will get bonus points.

3) Write the based on the phonemes you've chosen, write the Underlying Representation of the words in number 1-10.

4) Are there any phonological processes going on? If yes, then name the process.
II. **Japanese**

The following three sounds exist phonetically in Japanese: [h], [φ], [ɕ]. ([φ] is a voiceless bilabial fricative; it is usually romanized in transliteration as f. [ɕ] is a voiceless palatal fricative. Note also that [u] is a high, back, unrounded vowel.) Examine the data below, given in phonetic transcription, and then determine which of these three possibilities is the case for Japanese:

i. The three sounds are allophones of a single phoneme.

ii. Two of the three sounds are allophones of one phoneme, while the third belongs to another phoneme.

iii. The three sounds represent three different phonemes.

| 1. çito       | ‘person’          |
| 2. haha       | ‘mother’          |
| 3. çifu       | ‘skin’            |
| 4. asaçi      | ‘morning sun’     |
| 5. heta       | ‘awkward, unskillful’ |
| 6. ãunc       | ‘ship’            |
| 7. hon        | ‘book’            |
| 8. haši       | ‘chopsticks’      |
| 9. hohei      | ‘infantryman’     |
| 10. ãuenφuto  | ‘neutrality’      |

Note: $\delta = \mathfrak{f}$

1) Find out which sounds are the phonemes and which sounds are the allophones. ? Draw the phoneme - allophone hierarchy in diagram form like in the example below (you may need to modify this example).

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 /   /
[ ]  [ ]
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2) You have to justify your answer by providing phonological rules that explains the distribution of the allophones. If you can provide rules in distinctive features, you will get bonus points.

3) Based on which sounds you have chosen as your phoneme, write out the Underlying Representation of all the Japanese words in the list.
III. Tibetan Numerals

Tibetan numerals are formed in the following way:
11 = the morpheme for 10 + the morpheme for 1
40 = the morpheme for 4 + the morpheme for 10

ʤu  '10'
ʃi  '4'
gu  '9'
ŋa  '5'
dʒig  '1'
dʒubʃi  '14'
dʒurgu  '19'
dʒunŋa  '15'
dʒugʤig '11'
ʃibʤu  '40'
gubʤu '90'
ŋabʤu  '50'

1) What are the Underlying Representations of the basic numerals: 1,4,5,9,10?
2) Are phonological rules required? If so, what are they?
IV. Polish

Note: ź = ʒ and š = ʃ

1) What are the Underlying Representations of:
   a. The plural morpheme
   b. The singular morpheme
   c. All the root words in the list

2) What are the phonological rules required to explain all the alternations in the list above? If you can provide them in distinctive features, you will get bonus points.

3) Is rule ordering required? If it is, then provide the proof. The proof should include:
   a. An example that shows that the correct forms are produced by the correct rule order.
   b. An example that shows that the incorrect forms are produced by the incorrect rule order.