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YOUR TA: _____

No material is admitted except paper and pencil. Remember to write legibly. There is a maximum of 50 Points. The midterm is worth 10 % of the overall score, less than a single assignment. So do not panic!

Important Note.

The following exam uses only the sounds of **English** and their corresponding IPA symbols. The consonants are classified into a place–feature, a manner–feature and a voice–feature.

Total number of points: 50

Your Score: _____

Question 1. (4 Points) Write in phonetic symbols: *voiced bilabial stop*: [b], *voiceless alveolar fricative*: [s], *alveolar nasal*: [n], *lower high rounded vowel*: [ʊ].

Question 2. (3 Points) Which articulators are involved in a *dental*? *The teeth and the tongue. Popular mistake: to just give me the dentals and not name the articulators. If you named the articulators, you were safe.*

Question 3. (3 Points) Complete the following AVSs.

$$\eta = \begin{bmatrix} \text{PLACE} & : \textit{velar} \\ \text{MANNER} & : \textit{nasal} \\ \text{VOICE} & : + \end{bmatrix}$$

$$\eth = \begin{bmatrix} \text{PLACE} & : \textit{dental} \\ \text{MANNER} & : \textit{fricative} \\ \text{VOICE} & : + \end{bmatrix}$$

Question 4. (4 Points) Write down the (English!) phonemes corresponding to this AVS.

[MANNER : *fricative*]

/f/, /v/, /θ/, /ð/, /ʃ/, /ʒ/, /s/, /z/, /h/.

Question 5. (5 Points) Is the following a natural class of English phonemes? {m, d, t}.
Yes No Yes No. If 'No', why not?

Answer: /m/ and /d/ disagree in place (bilabial vs. alveolar), and they disagree in manner (nasal vs. stop). /t/ and /d/ disagree in voice (- vs. +). There is no common feature-value pair between them. However, there are more phonemes that are described by an empty AVS, for example /p/. Popular mistakes: (a) to claim there is no AVS that can describe this situation of no feature values matching; there is, it is the empty AVS; (b) to forget to say that the empty AVS describes more than the class given.

Question 6. (6 Points) Let the following rule be given (V stands for 'vowel').

$$[\text{MANNER} : \text{stop}] \rightarrow [\text{MANNER} : \text{nasal}]/V_V$$

Apply this rule to the following strings.

- ① Input: [lɛdo] Output: [lɛno]
- ② Input: [daka] Output: [daja]
- ③ Input: [otrop] Output: [otrop]

Occasionally people gave me several outputs. That cannot be right!

Question 7. (5 Points) Name the components of a syllable:
onset, rhyme, nucleus, coda

Draw the syllable structure of the monosyllabic word [stɛlθ].

$$[[s \quad t]_O \quad [[\varepsilon]_N \quad [l \quad \theta]_C]_R]_\sigma$$

Question 8. (2 Points) It is said that English syllables cannot end in a sequence of nasal plus stop which disagree in place. Why does this not contradict the fact that

English has the words [ʌnpɹɛsədɛntəd], and [kɒŋgləmθət]?

Answer: The offending sequences ([np], [ng]) contain sounds from different syllables. Therefore, [np] does not end a syllable neither does [ng]. (This is enough. If you want to do a complete job you will have to justify that the sounds really are in different syllables, but I did not require that. However anything short of saying that the sounds were in different syllables was considered incorrect.) Popular mistakes include arguing the data away (“schwa insertion”). You were asked to take the data at face value!

Question 9. (4 Points) Divide the word [ɪntɹɔspɛkʃən] (introspection) into syllables. Say why it is divided in this way.

Answer: [ɪn.tɹɔ.spɛk.ʃən]. (a) There is no word that begins with [ntɹ]. [tr] is a legitimate onset: [tɹat]; (b) [sp] is a legitimate onset: [spɪl]; (c) [kʃ] is not a legitimate onset; [ʃ] is a legitimate onset: [ʃʌn]. Popular mistakes: to just tell me everything is due to Maximize Onset and not tell me how the principle justified the particular division into syllables rather than another. Minus two points if you did not tell me what words justified your choice of onsets.

Question 10. (8 Points) The sound [ɲ] is distinct from [n] in that the tongue is moved further towards the teeth. Here is where we find [ɲ] and [n] in English:

know	[ˈno]	tenth	[ˈtɛɲθ]
annoy	[əˈnoɪ]	month	[ˈmʌɲθ]
never	[ˈnevə]	panther	[ˈpæɲθə]

- ① Write a rule of realization for the change of the phoneme /n/ into [ɲ] that accounts at least for the examples above.

Answer: /n/ → [ɲ]/__θ

- ② Would you expect [ɲ] to occur before [ð] or not even if there is no English word to test that? Give reasons for your answer!

Answer: Yes. The rule can be motivated from an articulatory standpoint. When pronouncing [θ] the tongue must move to the teeth, while it is in alveolar position when pronouncing [n]. Moving the tongue closer to the teeth makes pronunciation easier. This has nothing to do with voicing, and the change is therefore

expected to happen also in the presence of [ð]. Popular mistake was to claim the process does go through since [ð] is voiced. There is however no prohibition to have voiced sounds in coda, moreover, since [n] is also voiced, this makes things even better so no need to repair anything! Also, people sometimes point at their own rule and said: it does not apply so I do not expect change. You cannot do that: you fabricate a rule whose only justification so far was that it accounted for the data above and then use that as evidence for totally different data. The generalisation must be based on an understanding of why the change occurs.

Question 11. (6 Points) Consider the following realization rule of American English.

Flapping

/t/ → [ɾ]/[+vowel]_____ [+vowel]

① Apply Flapping to the following words:

(a) /'raɪtə/ Answer: /'raɪɾə/

(b) /ə'tæk/ Answer: /ə'ɾæk/

(c) /'nɒtəbəl/ Answer: /'nɒɾəbəl/

(d) /nə'teɪʃən/ Answer: /nə'ɾeɪʃən/

② The rule gives incorrect results for /ə'tæk/ (attack) and /nə'teɪʃən/ (notation).

What condition do we need to impose on **Flapping** to give correct output?

Answer: It gives wrong output when the syllable is stressed. Thus, one way to ensure its correctness is to require that the [t] not be in a stressed syllable. There are more formally correct solutions, though. For example: it applies only to non front vowels. I accepted the answer. Popular mistakes included incorrect claims about stress and syllable structure. For example, some people wrongly asserted that the stress is before the syllable when flapping is blocked. They got misled by the notation, which puts the stress mark before the syllable that carries the stress. Remember: stress is a property of the syllable! Thus, we may claim that the [t] itself carries stress as well. Second, some people thought it had to do with whether or not the vowels preceding and following the [t] are in the same syllable. They never can be!