

What you should be familiar enough with that you shouldn't have to look up:

basic geography of the vocal tract and articulatory terms: places of articulation, manners of articulation, voicing, vowel height, vowel backness

IPA symbols for all phonemes and rules for all major allophones of English: aspiration, glottalization, /l/-velarization, flapping, vowel lengthening, vowel nasalization

properties of sound waves and various tube types: period, frequency, wavelength, harmonics, periodic vs. aperiodic, simple vs. complex, white noise, transients, fundamental frequency, filters, bandwidth, resonant frequencies (closed, half-open, Helmholtz), anti-formants

general ideas behind tube models of vowels

interpretation of nomograms

principles of Perturbation Theory: nodes, anti-nodes, constriction/expansion effects

acoustic properties of English sounds and how they appear in waves and in spectrograms: intensity, formants, white noise, voicing, release bursts, formant transitions, anti-formants

basic concept of propagation of uncertainty in measurement

Types of questions you are likely to see:

transcribe English sounds phonemically (broadly) and phonetically (narrowly)

convert transcriptions into ordinary English spelling

calculate (fundamental) frequencies, wavelengths, and harmonics of simple and complex waves

calculate resonant frequencies of simple tubes

read and analyze nomograms for particular articulations

describe Perturbation Theory predictions for particular articulations

read and draw spectrograms

critical thinking questions demonstrating comprehension of the concepts covered so far and ability to integrate multiple different concepts for drawing conclusions from a given set of phonetic facts

Information you will have access to:

your textbooks, notes, handouts, quizzes, and labs from this semester; you should bring all of these materials to the exam, because there is no guarantee that extra copies of any course material will be available; you cannot use any material from previous offerings of this class

speed of sound and other constants, including any necessary vocal tract distances: glottis to lips, glottis to uvula, glottis to nostrils, etc.

any necessary nomograms for questions asking about specific vocal tract configurations

labeled tubes approximating the vocal tract, with matching overlaying graphs of relevant resonant frequencies (as on the Perturbation Theory handout)

all formulas for tube resonance, standard error, and error propagation