ENG507

Final-Term (Solved)

ABSTRACT

This comprehensive collection of notes is accurately crafted to empower students to excel academically, ensuring they achieve a minimum of 80% marks in their examinations. The content is organized with clarity and precision, focusing on key concepts, critical analyses, and practical applications tailored to the syllabus. These notes serve as a reliable resource for both thorough preparation and last-minute revision. Designed to inspire confidence and mastery, this guide is an essential tool for students striving for academic excellence.

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Focus topics: **IPA, Spectrogram, Praat, Perturbation Theory, Phonetics concepts**

✅ Fill-in-the-Blanks Topics

(These may appear as paragraph blanks or sentence completions.)

1. **Resonance frequency rule**
   → "The resonance frequency of the particular resonance _____ _____ when a constriction is located at an _____ of that resonance mode."
   (Answer: Decrease/increase, node/antinode)
2. **Source–filter mechanism paragraph blanks**
3. **Tone stress blanks**
4. **VOT paragraph blanks**
5. **Praat-related blanks**
6. **IPA chart blanks**
7. **Fill in blanks with pronunciation skills or concepts**
8. **Each word of six phonemic syllables (CCCVCC) and one of seven phonemic syllables (CCCVCCC)**

✅ True/False Topic

- **Glides – true/false paragraph**
  Includes:
  - Analyze F1, F2, F3 of /w/ and /j/ at midpoint
  - Compare glide formant structure to vowels & nasals

Languages & Sounds

- **Aspirated pʰ**: Found in **Sindhi** and other Pakistani languages like Pashto; aspirated voiceless bilabial plosive.
- **Murmured (breathy) bʱ**: Occurs in **Sindhi**; it is a voiced bilabial plosive with breathy voice.
- **Implosive ɓ**: A voiced implosive bilabial plosive found in **Sindhi**.

Stress: Word vs. Sentence Stress

- **Word stress**: Emphasis on a syllable in a word, e.g., **'IMport' (noun)**.
- **Sentence stress**: Emphasis on a word in a sentence, e.g., **'imPORT' (verb)**.

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Primary & Secondary Cardinal Vowels

- **Primary**: 8 reference vowels arranged by tongue height and advancement (e.g., [i], [e], [a], [u]).
- **Secondary**: Additional vowels created by rounding or centralizing (e.g., [y], [ø]).

Sonorants

- **Definition**: Sounds produced with free airflow, allowing resonance; includes **nasals, liquids, glides**.

ART and RTR

- **ATR (Advanced Tongue Root)** and **RTR (Retracted Tongue Root)**: Refers to tongue position relative to the pharynx; significant in vowel harmony systems.

Acoustic Phonetics (Definition)

- The study of the **physical properties of speech sounds** (frequency, amplitude, duration) as transmitted through air.

Glottal Stop

- **Definition**: A sound produced by a complete closure of the vocal cords ([ʔ]); found in words like "uh-oh".

Universal Language Features

- Features like **consonants, vowels, syllables, and intonation** that occur across all languages to varying degrees.

Suprasegmental Features

- Features **beyond individual sounds**, such as **stress, pitch (tone), intonation, and rhythm**.

IPA: 3–5 Symbols, Position, Full Form

- Example symbols:
  - [p]: voiceless bilabial plosive
  - [n]: voiced alveolar nasal
  - [ʃ]: voiceless postalveolar fricative
  - [u]: high back rounded vowel
  - [a]: low central vowel

Three Suprasegmental Features

- **Stress**, **intonation**, **tone**.

Function of First Formant (F1)

- Inversely related to **tongue height**: higher F1 = lower tongue height.

Function of Second Formant (F2)

- Related to **tongue advancement**: higher F2 = front vowels; lower F2 = back vowels.

Three Variables of Pitch

- **Frequency**, **amplitude**, **duration** (sometimes intensity or contour is considered).

VOT – Three Types

- **Voicing lead (negative VOT)**, **zero VOT**, and **voicing lag (positive VOT)**.

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Three Sounds in the "Umbrella Approximant"

- Typically includes **glides** ([j], [w]) and **liquids** ([l], [ɹ]).

Feature Hierarchy – Main Divisions

- **Major class features**: [consonantal], [sonorant], [approximant];
  Followed by **place features** (labial, coronal, dorsal).

Three Types of Approximant-Related Sounds

- **Liquids**, **glides**, **laterals**.

Strategies of Coronal

- Variations like **apical**, **laminal**, **retroflex**, **palatalized**.

Secondary Articulatory Gestures

- **Labialization**, **palatalization**, **velarization**, **pharyngealization**.

Types of Syllables (Names & Examples)

- **CV**: go
- **CVC**: cat
- **CCVCC**: plant
- **CCCVCCC**: strengths

Syllable-Timed vs Stress-Timed

- **Syllable-timed**: Equal time per syllable (e.g., French)
- **Stress-timed**: Equal time between stresses (e.g., English)

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Voiced vs Voiceless Sounds

- **Voiced**: Vibration of vocal cords (e.g., [b], [d])
- **Voiceless**: No vibration (e.g., [p], [t])

Parts of Vocal Tract

- Includes **lips, teeth, alveolar ridge, palate, velum, uvula, glottis, tongue**.

Urdu Retroflex Sounds (Examples)

- [ʈ] in **ٹماٹر**, [ɖ] in **ڈاکٹر**, [ɳ] in **ڈھنڈک**

Five Regional Languages of Pakistan

- **Punjabi**, **Sindhi**, **Pashto**, **Balochi**, **Saraiki**

Perturbation Theory (Definition)

- Predicts **resonance frequency changes** in the vocal tract based on **constriction location**.

How Praat Measures Pitch (3 Ways)

- **Pitch tracking**, **spectrogram**, **formant analysis**

Mandarin Tones for “ma”

- **High-level (mā)** = mother
- **Rising (má)** = hemp
- **Falling-rising (mǎ)** = horse
- **Falling (mà)** = scold

Spectrographic Hints in Stop Sounds

- **Silent gap**, **release burst**, **formant transitions**

Spectrographic Hints in Consonants

- **Fricatives** = noisy energy
- **Nasals** = low-frequency energy
- **Approximants** = formants like vowels but weaker

Three Dimensions of Syllables

- **Onset**, **nucleus**, **coda**

Three Plosive Sounds

- [p], [t], [k] (voiceless plosives)

How to Display Files in Praat

1. **Record** or **import** audio
2. **Select** file
3. Click **View & Edit**
4. Use **spectrogram**, **pitch**, **formant** tools

Types of Articulatory Targets

- **Place**, **manner**, **voicing**

Counting Syllables in Words

- Based on **vowel nuclei** (each vowel = one syllable)

IPA (Symbols, Chart, Cardinal Vowels)

- IPA chart displays **consonants & vowels** by **place and manner**.
  Cardinal vowels: [i], [e], [ɛ], [a], [ɑ], [ɔ], [o], [u].

Spectrogram Analysis

- Visual tool for analyzing **frequency, duration, intensity**.
  Time = x-axis, frequency = y-axis, darkness = intensity.

Praat Software

- Used for **recording**, **analyzing speech**, **measuring pitch/formants**, **spectrogram display**.

Voice Onset Time (VOT)

- Time between **release of stop** and **start of voicing**.

Source–Filter Theory

- Describes speech as **source (vocal folds)** + **filter (vocal tract)** = final sound output.

Approximants, Glides, Plosives

- **Approximants**: [l], [ɹ], [j], [w]
- **Glides**: [j], [w]
- **Plosives**: [p], [t], [k], [b], [d], [g]

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Secondary Articulations & Articulatory Targets

- Articulations added to primary place/manner (e.g., [k^w] = labialized velar)
- Targets = **intended place/manner/voicing**

Types of Syllables (CCVCC, CCCVCC, CCCVCCC)

- Complex phonemic structures found in English:
  - **CCVCC**: blend
  - **CCCVCC**: street
  - **CCCVCCC**: strengths

Acoustic Phonetics Terms and Definitions

- Terms like **formants, pitch, intensity, duration, spectrogram** belong to acoustic phonetics.