Allama Iqbal Open University AIOU BS English solved assignment NO 1 Autumn 2025
Code 9056 Phonetics and Phonology

Q.1 Write down the distinctive features of the final consonantal sound in each of the following words: Academic, Syntax, Worldly, Explanation, Threads.

When we analyze **distinctive features** of consonantal sounds, we describe them according to several **phonetic categories**, such as:

- **Place of articulation** (where the sound is produced in the mouth — e.g., bilabial, alveolar, velar).

- **Manner of articulation** (how the airflow is modified — e.g., stop, fricative, nasal, etc.).

- **Voicing** (whether the vocal cords vibrate — voiced / voiceless).

Let us analyze the **final consonantal sound** in each given word individually.

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1. Academic /ɪkəˈdɛmɪk/

Final consonant sound: /k/

Phonetic Features:

- **Place of articulation:** Velar (produced at the back of the tongue against the soft palate)

- **Manner of articulation:** Plosive / Stop (complete closure followed by release of air)

- **Voicing:** Voiceless (vocal cords do not vibrate)

Distinctive features:

[-voice], [+consonantal], [-nasal], [+stop], [+velar]

Explanation:

In “academic,” the last consonant /k/ is a voiceless velar plosive, produced by blocking airflow at the velum and releasing it with a burst.

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2. Syntax /ˈsɪntæks/

Final consonant sound: /s/

Phonetic Features:

- **Place of articulation:** Alveolar (produced by the tongue near the alveolar ridge)

- **Manner of articulation:** Fricative (airflow is partially obstructed, creating friction)

- **Voicing:** Voiceless

Distinctive features:

[-voice], [+consonantal], [-nasal], [+fricative], [+alveolar]

Explanation:

The final /s/ sound in “syntax” is a **voiceless alveolar fricative**, produced by forcing air through a narrow passage between the tongue and alveolar ridge.

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3. Worldly /ˈwɜːldli/

Final consonant sound: /i/ → but the **last consonantal sound** is /l/ (in “-ly”)

So, we analyze **/l/** here.

Phonetic Features:

- **Place of articulation:** Alveolar (tongue touches the alveolar ridge)

- **Manner of articulation:** Lateral approximant (air flows along the sides of the tongue)

- **Voicing:** Voiced

Distinctive features:

[+voice], [+consonantal], [-nasal], [+lateral], [+alveolar]

Explanation:

In “worldly,” the /l/ sound is a **voiced alveolar lateral approximant**, made by allowing air to escape along the sides of the tongue while the tip touches the alveolar ridge.

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4. Explanation /ˌɛkspləˈneɪʃən/

Final consonant sound: /n/

Phonetic Features:

- **Place of articulation:** Alveolar

- **Manner of articulation:** Nasal (air passes through the nose)

- **Voicing:** Voiced

Distinctive features:

[+voice], [+consonantal], [+nasal], [+alveolar]

Explanation:

The /n/ sound is produced when the tongue touches the

alveolar ridge, blocking oral airflow while air passes through the nasal cavity.

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5. Threads /θrɛdz/

Final consonant sound: /z/

Phonetic Features:

- **Place of articulation:** Alveolar
- **Manner of articulation:** Fricative
- **Voicing:** Voiced

Distinctive features:

[+voice], [+consonantal], [-nasal], [+fricative], [+alveolar]

Explanation:

In “threads,” the final sound /z/ is a **voiced alveolar fricative**, made by vibrating the vocal cords while air flows through a narrow space between the tongue and alveolar ridge.

Summary Table: Distinctive Features of Final Consonantal Sounds

Word	Final Consonant Sound	Voicing	Place of Articulation	Manner of Articulation	Distinctive Features Summary
Academic	/k/	Voiceless	Velar	Stop / Plosive	[-voice], [+stop], [+velar]

Syntax	/s/	Voiceless	Alveolar	Fricative	[-voice], [+fricative], [+alveolar]
Worldly	/l/	Voiced	Alveolar	Lateral Approximant	[+voice], [+lateral], [+alveolar]
Explanation	/n/	Voiced	Alveolar	Nasal	[+voice], [+nasal], [+alveolar]
Threads	/z/	Voiced	Alveolar	Fricative	[+voice], [+fricative], [+alveolar]

Conclusion

Each final consonantal sound carries unique phonetic characteristics that determine how it is produced and perceived. The differences in voicing, place, and manner of articulation give distinct sounds their individuality. Such analysis helps linguists, teachers, and learners understand pronunciation patterns and phonological distinctions in English.

Q.2 Transcribe and write down the number of phonemes in each of the following words: Causes, Borders, Zenith, Pinnacle, Apex.

Phonemic transcription is the process of representing words by their individual sounds (phonemes) using symbols from the **International Phonetic Alphabet (IPA)**. Below is the phonemic transcription and the total number of phonemes for each given word.

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1. Causes

Phonemic Transcription: /ˈkɔːzɪz/ (British) or /ˈkɔːzəz/ (American)

Number of Phonemes: 6

Breakdown of phonemes:

/ˈk/ – voiceless velar plosive

/ɔː/ – long open-mid back rounded vowel

/z/ – voiced alveolar fricative

/ɪ/ – short high front vowel

/z/ – voiced alveolar fricative

→ **Total = 6 phonemes**

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2. Borders

Phonemic Transcription: /ˈbɔːdəz/ (British) or /ˈbɔːrdərz/ (American)

Number of Phonemes: 6

Breakdown of phonemes:

/ˈb/ – voiced bilabial plosive

/ɔː/ – long open-mid back rounded vowel

/d/ – voiced alveolar plosive

/ə/ – mid-central vowel (schwa)

/z/ – voiced alveolar fricative

→ **Total = 6 phonemes**

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3. Zenith

Phonemic Transcription: /ˈzenɪθ/ (British) or /ˈziːnəθ/ (American)

Number of Phonemes: 5

Breakdown of phonemes (British):

/z/ – voiced alveolar fricative

/e/ – short mid-front vowel

/n/ – voiced alveolar nasal

/ɪ/ – short high front vowel

/θ/ – voiceless dental fricative

→ **Total = 5 phonemes**

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4. Pinnacle

Phonemic Transcription: /ˈpɪnəkl/

Number of Phonemes: 7

Breakdown of phonemes:

/p/ – voiceless bilabial plosive

/ɪ/ – short high front vowel

/n/ – voiced alveolar nasal

/ə/ – mid-central vowel (schwa)

/k/ – voiceless velar plosive

/l/ – voiced alveolar lateral approximant

→ **Total = 7 phonemes**

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5. Apex

Phonemic Transcription: /ˈeɪpeks/

Number of Phonemes: 5

Breakdown of phonemes:

/eɪ/ – diphthong (long vowel sound, counted as one phoneme)

/p/ – voiceless bilabial plosive

/e/ – short mid-front vowel

/k/ – voiceless velar plosive

/s/ – voiceless alveolar fricative

→ **Total = 5 phonemes**

Summary Table

Word	Phonemic Transcription (IPA)	Number of Phonemes
Causes	/ˈkɔːzɪz/	6
Borders	/ˈbɔːdəz/	6
Zenith	/ˈzenɪθ/	5
Pinnacle	/ˈpɪnəkl/	7
Apex	/ˈeɪpeks/	5

Explanation

Each phoneme represents a single sound unit in speech that can distinguish one word from another. Understanding phonemic transcription helps learners accurately pronounce English words by focusing on sound rather than spelling.

Q.3 Transcribe and write down the CV templates for the following words, showing their syllabic boundaries: Suprasegmental, Amusement, Resourceful, Faithless, Accessible.

Phonemic transcription represents the pronunciation of a word, while a **CV (Consonant-Vowel) template** shows the **pattern of consonants (C)** and **vowels (V)** in each syllable.

Syllabic boundaries are marked with a **dot (·)** to show where one syllable ends and another begins.

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1. Suprasegmental

Phonemic Transcription: /ˌsuːprəsegˈmentəl/

Syllabic Division: su·pra·seg·men·tal

Number of Syllables: 5

CV Template:

C V · C C V · C V C · C V C · C V C

Explanation:

- /suː/ → CV (consonant + long vowel)
- /prə/ → CCV (consonant cluster + vowel)
- /seg/ → CVC
- /men/ → CVC
- /təl/ → CVC

  Each syllable contains a vowel nucleus, and the word overall follows a mixed consonant-vowel pattern

common in longer academic terms.

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2. Amusement

Phonemic Transcription: /əˈmjuːzmənt/

Syllabic Division: a·muse·ment

Number of Syllables: 3

CV Template:

V · CCVVC · CVC

Explanation:

- /ə/ → V

- /mjuːz/ → CCVVC (consonant cluster /mj/ + long vowel + final consonant)

- /mənt/ → CVC

  The middle syllable “muse” carries the stress, and the long vowel /uː/ makes this syllable prominent.

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3. Resourceful

Phonemic Transcription: /rɪˈsɔːsfʊl/

Syllabic Division: re·source·ful

Number of Syllables: 3

CV Template:

CV · CVVC · CVC

Explanation:

- /rɪ/ → CV

- /sɔːs/ → CVVC (vowel + final consonant)

- /fʊl/ → CVC

  The stress falls on the second syllable “source.” The word exhibits a balanced consonant–vowel pattern typical of compound adjectives.

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4. Faithless

Phonemic Transcription: /ˈfeɪθləs/

Syllabic Division: faith·less

Number of Syllables: 2

CV Template:

CVCC · CVC

Explanation:

- /feɪθ/ → CVCC (diphthong vowel + final consonant cluster)

- /ləs/ → CVC

  The diphthong /eɪ/ counts as a single vowel sound (V), and /θ/ + /l/ form a cluster transition between syllables.

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5. Accessible

Phonemic Transcription: /əkˈsesəbl/

Syllabic Division: ac·ces·si·ble

Number of Syllables: 4

CV Template:

VC · CVC · CV · CVC

Explanation:

- /ək/ → VC
- /ses/ → CVC
- /si/ → CV
- /bl/ → CVC

Stress falls on the second syllable “ces,” making it

the prominent syllable in pronunciation.

Summary Table

Word	Phonemic Transcription (IPA)	Syllabic Division	No. of Syllables	CV Template
Suprasegmental	/ˌsuːprəsegˈmentəl/	su·pra·seg·men·tal	5	C V · C C V · C V C · C V C · C V C
Amusement	/əˈmjuːzmənt/	a·muse·ment	3	V · CCVVC · CVC
Resourceful	/rɪˈsɔːsfʊl/	re·source·ful	3	CV · CVVC · CVC

Faithless	/ˈfeɪθləs/	faith·less	2	CVCC · CVC
Accessible	/əkˈsesəbl/	ac·ces·si·ble	4	VC · CVC · CV · CVC

Conclusion

Each English word follows a systematic **CV pattern** that defines its phonological structure. Identifying syllables and consonant-vowel arrangements helps learners understand English pronunciation, stress patterns, and syllable timing. The CV template analysis is especially useful in phonetics and phonology studies for breaking down words into sound-based components for clear and accurate pronunciation.

Q.4 Describe English ‘pure’ vowels with relevant examples.

In English phonetics, vowels are speech sounds produced without any significant obstruction of airflow in the mouth or throat. When we talk about **“pure vowels”** (also called **monophthongs**), we refer to those vowel sounds that have a **single, unchanging sound quality** throughout their duration. This means the tongue and lips remain steady during articulation — unlike **diphthongs**, which involve a glide or movement from one vowel position to another.

Pure vowels are the foundation of English pronunciation. They vary depending on **tongue position (front, central, back)**, **height (high, mid, low)**, and **lip rounding (rounded or unrounded)**. In standard British English

(Received Pronunciation), there are **12 pure vowels**, divided into **short vowels** and **long vowels**.

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1. Short Pure Vowels (7 Sounds)

Short vowels are produced with a relatively short duration and less tension in the vocal muscles. They are usually found in unstressed syllables or shorter words.

Vowel Sound	IPA Symbol	Example Words	Description
/ɪ/	as in *sit, bit, ship*		A short front vowel produced with the tongue raised slightly

		close to the palate. Lips are unrounded.
/e/	as in *pen, bed, said*	A mid-front vowel, slightly lower than /ɪ/. Lips remain unrounded.
/æ/	as in *cat, man, apple*	A low-front vowel pronounced with the tongue positioned low and the mouth open wide.
/ʌ/	as in *cup, luck, love*	A central vowel with the tongue in the middle of the mouth, lips unrounded.
/ɒ/	as in *hot, not, clock*	A low-back rounded vowel pronounced with the tongue

		positioned towards the back and lips rounded.
/ʊ/	as in *put, book, cook*	A high-back rounded vowel, produced with less tension than /uː/. Lips are rounded.
/ə/	as in *about, teacher, banana*	Known as the *schwa*, this is a very short, neutral vowel that occurs in unstressed syllables.

Explanation:

Short vowels are more relaxed and occur quickly. The most common short vowel in English is the **schwa /ə/**, which appears in many unstressed syllables (e.g., *sofa, doctor, again*). These sounds play a vital role in English rhythm and stress patterns.

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2. Long Pure Vowels (5 Sounds)

Long vowels are pronounced with greater muscular tension and for a longer duration. The length is often indicated by a **colon mark (:)** in IPA transcription.

Vowel Sound	IPA Symbol	Example Words	Description
/iː/	as in *see, eat, machine*		A long high-front unrounded vowel, with the tongue positioned near the roof of the mouth.

/ɑː/	as in *car,* *father,* *heart*	A long low-back unrounded vowel, made with the tongue low and back in the mouth.
/ɔː/	as in *law, talk,* *more*	A long mid-back rounded vowel, produced with rounded lips.
/uː/	as in *blue,* *food,* *shoe*	A long high-back rounded vowel, pronounced with the tongue close to the soft palate.
/ɜː/	as in *bird,* *nurse,* *word*	A long mid-central unrounded vowel, often written with *ir, er, ur* spellings.

Explanation:

Long vowels are held longer and often occur in stressed syllables. For example, *beat /biːt/* and *bit /bɪt/* differ only by vowel length and quality. Similarly, *pool /puːl/* and *pull /pʊl/* contrast due to vowel length. This difference in vowel duration can change meaning, so accurate pronunciation of long vowels is essential in English.

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3. Classification of Pure Vowels by Tongue Position

Pure vowels are classified according to **tongue height**, **tongue position**, and **lip rounding**:

Tongue Height / Position	Front	Central	Back

High (Close)	/iː/, /ɪ/	—	/uː/, /ʊ/
Mid	/e/	/ɜː/, /ə/	/ɔː/
Low (Open)	/æ/	/ʌ/	/ɒ/, /ɑː/

Explanation:

- **Front vowels** (like /iː/, /e/, /æ/) are produced with the tongue near the front of the mouth.

- **Central vowels** (like /ɜː/, /ə/, /ʌ/) are produced with the tongue in the center.

- **Back vowels** (like /uː/, /ʊ/, /ɔː/, /ɒ/, /ɑː/) are produced with the tongue pulled backward.

  Additionally, back vowels are often **rounded**, while front vowels are **unrounded**.

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4. Examples in Words and Sentences

Below are examples of how pure vowels appear in everyday English words:

IPA	Example Words	Sample Sentence
/iː/	see, heat, feel	She can see the green tree.

/ɪ/	sit, ship, list	Sit still on the chair.
/e/	pen, head, said	He kept the pen on the desk.
/æ/	cat, back, man	The black cat ran fast.
/ɑː/	car, start, park	The car is in the park.
/ɒ/	hot, dog, top	It’s too hot for the dog.
/ɔː/	talk, door, more	They talked for more than an hour.

/ʊ/	book, cook, foot	I put the book on the shelf.
/uː/	blue, food, room	The food was too cool.
/ʌ/	cup, sun, love	The sun is up early.
/ɜː/	bird, word, girl	The girl heard a bird.
/ə/	about, doctor, sofa	The doctor sat on the sofa.

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5. Distinction Between Pure Vowels and Diphthongs

- **Pure vowels (monophthongs):** have one stable sound quality (e.g., /iː/ in *see*, /ɒ/ in *hot*).

- **Diphthongs:** combine two vowel qualities in a single syllable (e.g., /aɪ/ in *my*, /eɪ/ in *say*).

Example Contrast:

- Pure vowel: *seat /siːt/*

- Diphthong: *sight /saɪt/*

The first has a steady vowel sound, while the second glides from /a/ to /ɪ/.

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6. Importance of Understanding Pure Vowels

Learning pure vowels is crucial for:

1. **Accurate pronunciation:** Clear differentiation between words like *ship* and *sheep*.

2. **Comprehension:** Helps listeners distinguish similar-sounding words.

3. **Fluency and stress patterns:** Correct vowel sounds improve natural speech rhythm.

4. **Spelling and phonics:** Understanding vowel sounds helps in reading and writing.

5. **Accent improvement:** Recognizing vowel length and tongue position aids in achieving standard English pronunciation.

Conclusion

English **pure vowels** are the building blocks of clear pronunciation. They are **monophthongal sounds** produced with a steady tongue and lip position. In Received Pronunciation, there are **12 pure vowels**—divided into **short (7)** and **long (5)**—that differ in tongue height, position, and lip rounding. A strong grasp of these vowels allows speakers to articulate words precisely, distinguish between minimal pairs, and develop natural English speech rhythm. Understanding and practicing pure

vowels is essential for anyone aiming to master English phonetics and spoken communication.

Q.5: Describe ‘juncture’ as a suprasegmental feature of English phonology and explain its possible functions in conversation.

Answer:

In phonology, *juncture* refers to the way sounds are joined together or separated in speech. It is a suprasegmental feature because it operates above individual sounds or segments and helps to distinguish meanings between words or phrases that might otherwise sound similar. Juncture can be thought of as the phonetic boundary between two sounds, syllables, or words that affects the rhythm, meaning, and flow of spoken language. It plays a crucial role in identifying where one word ends and another begins in continuous speech. Without proper

juncture, speech would become ambiguous and difficult to understand.

For example, in English, the phrases **“ice cream”** and **“I scream”** have the same sequence of sounds, but the placement of juncture between the words determines their meaning. Similarly, **“night rate”** and **“nitrate”** differ only because of the boundary between the syllables. Thus, juncture helps listeners interpret spoken messages accurately by signaling where words or syllables divide.

Phonologists generally classify juncture into different types such as **open juncture**, **close juncture**, and **terminal juncture**, each serving a specific role in speech patterns and sentence interpretation.

1. Open Juncture (+)

Open juncture indicates a noticeable pause or break

between two words that could otherwise be confusing if run together. It is used to separate one word from another in rapid speech.

Example: *an aim* [+ən +eɪm] vs. *a name* [əneɪm].

Here, the open juncture helps differentiate between similar sound sequences by creating a small pause or release of air.

2. Close Juncture (−)

Close juncture occurs within a word when two syllables or morphemes are tightly connected without any pause or break. It means the sounds flow smoothly together.

Example: *nitrate* [ˈnaɪtreɪt] vs. *night rate* [ˈnaɪt +reɪt].

In *nitrate*, the close juncture between *t* and *r* keeps it as one word, whereas in *night rate*, the juncture between *t* and *r* indicates two separate words.

3. Terminal Juncture (‖)

Terminal juncture signals the end of an utterance or a significant pause, marking the completion of a sentence or thought. It can also reflect sentence intonation, such as distinguishing a statement from a question.

Example:

- *You're leaving now.*‖ (statement)

- *You're leaving now?*‖ (question)

  The terminal juncture helps listeners understand whether the speaker is making a statement, asking a question, or expressing surprise.

Juncture is therefore vital in *connected speech*, where words are not always clearly separated by pauses. In

natural English communication, speakers rarely articulate each word in isolation; instead, sounds blend together through *liaison* and *elision*. Juncture helps to resolve this blending by allowing the listener to recognize meaningful divisions through subtle pauses, pitch changes, or stress patterns.

In **conversation**, juncture serves several important functions:

1. Meaning Differentiation

Juncture differentiates between words or phrases that share similar sounds but differ in meaning. For instance, *my train* vs. *might rain* depend entirely on juncture for clarity. Without proper juncture, such phrases could easily be misunderstood.

2. Indicating Sentence Boundaries

It signals the beginning and end of sentences or clauses. This helps listeners follow the flow of speech, understand when a thought is complete, and prepare for the next one.

3. Reflecting Emotion and Attitude

Speakers use juncture along with intonation to express emotions like surprise, anger, hesitation, or uncertainty. For example, a slight pause before a word can indicate emphasis or hesitation, while a longer pause can signal emotional impact.

4. Enhancing Clarity and Rhythm

Proper use of juncture ensures smooth rhythm and natural pacing in speech. It prevents words from running together and keeps communication intelligible. This is

especially important in public speaking, teaching, or broadcasting, where clarity is essential.

5. Supporting Syntactic Understanding

Juncture helps to distinguish grammatical relationships in sentences. For example:

- *Let's eat, grandpa!* (a call to grandpa)

- *Let's eat grandpa!* (suggesting cannibalism)

  Here, the pause (or lack thereof) completely changes the sentence's meaning.

6. Managing Conversational Flow

In dialogue, speakers use juncture to indicate turn-taking. A falling terminal juncture often signals that a speaker has

finished, while a rising juncture indicates that more information is coming or that a response is expected.

In linguistic terms, juncture operates alongside other suprasegmental features such as **intonation**, **stress**, and **rhythm** to shape the melody of speech. It is essential not only for distinguishing words and phrases but also for conveying nuances of meaning, emotion, and grammatical structure.

From a phonetic perspective, juncture can be described as a **momentary modification in articulatory tension or airflow** that marks boundaries in speech. Acoustic studies show that listeners perceive juncture through small variations in timing, pitch, and amplitude. For example, the pause in *night rate* versus the continuous flow in *nitrate* is enough for the human ear to detect the word boundary.

In **language teaching**, understanding juncture is crucial for non-native learners who struggle with connected speech. Learners often speak word-by-word without natural pauses, which can make their speech sound robotic or unclear. Teaching juncture helps them acquire more natural rhythm, stress, and intonation patterns. Exercises like sentence reading, minimal pair practice, and intonation drills help learners identify and produce appropriate juncture points.

Examples of Juncture in Context:

1. *That stuffy nose* vs. *That's tough, he knows.*

2. *Peace talks* vs. *Pea stalks.*

3. *I scream* vs. *Ice cream.*

4. *We can* vs. *Week end.*

In all these examples, the juncture changes meaning even though the sound segments are nearly identical.

To sum up, juncture is a vital suprasegmental feature that influences how words and phrases are perceived in continuous speech. It operates as a **boundary marker**, helping distinguish between lexical items, clarify syntactic structure, indicate emotional tone, and guide conversational flow. Along with stress and intonation, it forms a key component of the prosodic system that ensures effective and meaningful communication in spoken English.

Hence, without appropriate juncture, speech could become confusing, monotonous, or misleading. Its correct use reflects fluency, precision, and naturalness in both native and second-language speakers.

Q.6: Define ‘Articulatory Phonetics’ and describe the processes involved in describing speech sounds.

Answer:

Articulatory phonetics is a major branch of phonetics that focuses on how speech sounds are produced by the movement and coordination of different organs in the human vocal tract. It studies the physiological and physical processes involved in the articulation (production) of sounds. In simpler terms, articulatory phonetics explains *how we speak*—how our tongue, lips, teeth, palate, vocal cords, and lungs work together to produce the wide variety of sounds found in human languages.

The term “articulation” comes from the Latin word *articulare*, meaning “to divide into joints” or “to speak clearly.” Therefore, articulatory phonetics is concerned

with *the joints or positions of speech organs* and how these create distinctive speech sounds known as *phonemes*. It provides the foundation for phonology, speech therapy, and linguistics, as it helps us understand the exact mechanics behind spoken communication.

In the study of articulatory phonetics, we examine **three main stages** of speech sound production:

1. **The Initiation Process** (how airflow is created)

2. **The Phonation Process** (how voice is produced)

3. **The Articulation Process** (how different organs shape the sound)

Let’s discuss these stages in detail:

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1. The Initiation Process (Air Stream Mechanism)

The first step in producing speech is creating an airstream. All spoken sounds require some kind of airflow to make vibrations that can be turned into sound waves. The airflow can come from different directions and sources, which are collectively known as **airstream mechanisms**.

There are mainly three types of airstream mechanisms:

a) Pulmonic egressive airstream (most common)

This is the most widely used airstream in all languages, including English. It means air is pushed *outward* from the lungs through the trachea and mouth. Almost all English sounds—like /p/, /b/, /t/, /k/, /f/, etc.—are produced using this mechanism.

b) Glottalic airstream (used for ejectives and implosives)

This mechanism involves the movement of the *glottis* (the space between the vocal cords).

- *Ejective sounds* are produced by closing the glottis and pushing air upward.

- *Implosive sounds* are produced by lowering the glottis to suck air inward.

  Languages like Hausa and Amharic use such sounds, though English does not.

c) Velaric airstream (used for clicks)

This involves creating two closures in the mouth—one at the back (velar) and one at the front (like the lips or

teeth)—and releasing the front closure to produce a *click*. Such sounds occur in African languages like Zulu and Xhosa.

Hence, the initiation process is responsible for *creating the raw air pressure* that becomes the source of speech.

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2. The Phonation Process (Voice Production at the Larynx)

After the airstream is generated, it passes through the **larynx**, where the *vocal cords* (also called *vocal folds*) are located. The larynx acts as the sound-producing organ of the body, often called the *voice box*.

Depending on the position and tension of the vocal cords, different types of phonation occur:

a) Voiced Sounds:

When the vocal cords are close together and air passes through them, they vibrate, creating *voiced sounds*.

Examples: /b/, /d/, /g/, /v/, /z/, /m/, /n/.

b) Voiceless Sounds:

When the vocal cords are open and relaxed, air passes freely without vibration, creating *voiceless sounds*.

Examples: /p/, /t/, /k/, /f/, /s/, /ʃ/.

c) Whisper and Creaky Voice:

- *Whispering* occurs when the vocal cords are partly open but do not vibrate.

- *Creaky voice* (laryngealization) happens when the vocal cords vibrate irregularly or tightly.

This stage is crucial because it determines whether a sound will have vocal cord vibration (voiced) or not (voiceless). The contrast between voiced and voiceless sounds is one of the most important distinctions in English phonetics—for instance, *bat* /bæt/ vs. *pat* /pæt/.

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3. The Articulation Process (Shaping the Sound)

Once the air and voice are produced, they must be shaped into recognizable sounds. This shaping occurs in the **vocal tract**, which consists of the oral cavity (mouth), nasal cavity, and pharyngeal cavity. The organs involved in shaping sounds are called **articulators**, and they modify the airstream to produce different consonants and vowels.

There are two categories of articulators:

a) Active Articulators:

These are movable parts that actually make contact during speech, such as the tongue, lips, lower jaw, and soft palate.

b) Passive Articulators:

These are stationary parts that active articulators touch or approach, such as the upper teeth, hard palate, alveolar ridge, and upper lip.

Major Organs of Speech and Their Functions

1. **Lungs** – supply the air needed for speech.

2. **Trachea** – carries air to and from the lungs.

3. **Larynx (Voice Box)** – houses vocal cords responsible for voicing.

4. **Pharynx** – a muscular passage that modifies resonance.

5. **Soft Palate (Velum)** – controls airflow between the mouth and nose.

6. **Hard Palate** – provides a surface for the tongue to strike or approach.

7. **Alveolar Ridge** – the ridge behind upper teeth; used in sounds like /t/, /d/, /n/.

8. **Teeth** – assist in producing dental sounds such as /θ/ and /ð/.

9. **Lips** – used to produce bilabial (/p/, /b/, /m/) and labiodental (/f/, /v/) sounds.

10. **Tongue** – the most important articulator, divided into tip, blade, front, back, and root, used in almost all sounds.

Types of Articulation Based on Manner and Place

1. Place of Articulation:

This describes *where* in the mouth the sound is produced.

- **Bilabial** – both lips: /p/, /b/, /m/
- **Labiodental** – lower lip and upper teeth: /f/, /v/
- **Dental** – tongue and teeth: /θ/, /ð/
- **Alveolar** – tongue and alveolar ridge: /t/, /d/, /s/, /z/, /n/, /l/
- **Palato-alveolar** – tongue near hard palate: /ʃ/, /ʒ/, /tʃ/, /dʒ/
- **Palatal** – tongue against hard palate: /j/ (as in *yes*)
- **Velar** – back of tongue and soft palate: /k/, /g/, /ŋ/

- **Glottal** – air passing through the glottis: /h/

2. Manner of Articulation:

This describes *how* the airstream is modified.

- **Plosives (Stops):** Complete closure, then release (e.g. /p/, /b/, /t/, /d/).

- **Fricatives:** Narrow passage creating friction (e.g. /f/, /v/, /s/, /z/).

- **Affricates:** Combination of stop and fricative (e.g. /tʃ/, /dʒ/).

- **Nasals:** Air escapes through the nose (e.g. /m/, /n/, /ŋ/).

- **Lateral:** Air escapes around sides of tongue (e.g. /l/).

- **Approximants:** Slight narrowing, no friction (e.g. /r/, /j/, /w/).

Processes Involved in Describing Speech Sounds

To describe a speech sound accurately, three main criteria are used:

1. **Voicing:**

- Whether the sound is voiced or voiceless (based on vocal cord vibration).

- Example: /b/ (voiced) vs. /p/ (voiceless).

2. **Place of Articulation:**

- The point where two articulators meet.

- Example: /t/ (alveolar), /k/ (velar), /f/ (labiodental).

3. **Manner of Articulation:**

- The way the airstream is modified.

- Example: /s/ (fricative), /m/ (nasal), /l/ (lateral).

So, any English sound can be completely described using these three terms.

For instance:

- /p/ = voiceless bilabial plosive
- /d/ = voiced alveolar plosive
- /f/ = voiceless labiodental fricative
- /m/ = voiced bilabial nasal

Importance of Articulatory Phonetics

1. **Language Teaching:** Helps learners understand how to produce sounds correctly.

2. **Speech Therapy:** Assists in diagnosing and correcting pronunciation disorders.

3. **Linguistic Research:** Provides data for comparing sound systems across languages.

4. **Phonetic Transcription:** Allows precise representation of speech sounds using IPA (International Phonetic Alphabet).

5. **Forensic Linguistics:** Helps identify speakers through voice analysis.

Conclusion

In conclusion, *articulatory phonetics* is the study of *how* humans physically produce speech sounds through the movement of articulators and control of airflow and voice. It focuses on the three fundamental processes—*initiation*, *phonation*, and *articulation*—which together form the basis of all spoken language. Understanding articulatory phonetics not only enhances linguistic knowledge but also improves pronunciation, teaching, and communication skills. It bridges the gap between the physical and cognitive aspects of speech, helping us appreciate the scientific precision behind the simple act of speaking.

Q.7 Phonemic Transcription

Here is the **phonemic transcription** of the given passage

Phonemic Transcription (IPA):

/fəˈnetɪk trænˈskrɪpʃən ɪz ðə ˈvɪʒuəl ˌrɛprɪzenˈteɪʃən əv spiːtʃ saʊndz ˈjuːzɪŋ ˈsɪmbəlz, moʊst ˈkɒmənli frəm ði ˌɪntəˈnæʃənəl fəˈnetɪk ˈælfəbɛt (ˈaɪ piː eɪ). ɪt eɪmz tə ˌrɛprɪˈzɛnt haʊ ə wɜːd ɔː freɪz ɪz prəˈnaʊnst, ˈrɑːðər ðæn haʊ ɪt ɪz spɛld. ðɪs ˈdɪfəz frəm ˈrɛgjələ ˈspɛlɪŋ, wɪtʃ kən ˈværi əˈkrɒs ˈlæŋgwɪdʒɪz ənd ˈdaɪələks, baɪ prəˈvaɪdɪŋ ə ˌjuːnɪˈvɜːsəl ənd ˌsɪstəmˈætɪk əˈproʊtʃ tə ˈkæptʃərɪŋ spiːtʃ saʊndz. fəˈnetɪk trænˈskrɪpʃən prəˈvaɪdz ə ˈstændədaɪzd weɪ tə ˌrɛprɪˈzɛnt spiːtʃ saʊndz, ˈmeɪkɪŋ ɪt ˈjuːsfəl fə ˈlæŋgwɪdʒ ˈlɜːnɪŋ, trænzˈleɪʃən, ənd lɪŋˈgwɪstɪk əˈnæləsɪs.

ði ˈaɪ piː eɪ ˈjuːzɪz ə sɛt əv ˈsɪmbəlz tə ˌrɛprɪˈzɛnt ɔːl ðə saʊndz faʊnd ɪn ˈhjuːmən ˈlæŋgwɪdʒ, ɪnˈkluːdɪŋ ˈkɒnsonənts, ˈvaʊəlz, ənd ˌsuːprəˌsɛgmɛnˈtæl ˈfiːtʃəz laɪk strɛs ənd ˌɪntəˈneɪʃən. fəˈnetɪk trænˈskrɪpʃən hɛlps brɪdʒ ˈlæŋgwɪdʒ ˈbæriəz baɪ prəˈvaɪdɪŋ ə klɪər ənd ˈækjərət weɪ tə ˌrɛprɪˈzɛnt prəˌnʌnsiˈeɪʃən. ɪts ˈɔːlsəʊ ˈvæljʊəbl fə ˌʌndəˈstændɪŋ haʊ ˈdɪfrənt ˈdaɪələks ənd ˈæksənts maɪt ˈværi. waɪl rɪˈleɪtɪd, fəˈnetɪk trænˈskrɪpʃən eɪmz tə ˈkæptʃə ɔːl ðə ˈdiːteɪlz əv prəˌnʌnsiˈeɪʃən, ɪnˈkluːdɪŋ ˈsʌtl ˌvɛəriˈeɪʃənz, waɪl fəˈniːmɪk trænˈskrɪpʃən ˈfoʊkəsɪz ɒn ðə sɪgˈnɪfɪkənt saʊndz ðət ˌdɪfəˈrɛnʃieɪt wɜːdz ɪn ə ˈlæŋgwɪdʒ. ðə ˈkæmbrɪdʒ ˈdɪkʃənəri ˈjuːzɪz ðə ˈsɪmbəlz əv ði ˌɪntəˈnæʃənəl fəˈnetɪk ˈælfəbɛt (ˈaɪ piː eɪ) tə ʃoʊ prəˌnʌnsiˈeɪʃən ɪn ˈraɪtɪŋ. juː kən ˈrɛkəgnaɪz ðiːz ˌprɒnʌnsiˈeɪʃənz baɪ ðə slæʃɪz bɪˈfɔːr ənd ˈɑːftə ðə wɜːd juː wɒnt tə trænˈskraɪb. juː kən ˈɔːlsəʊ klɪk ɒn ði ˈaɪkɒnz tə

ˈlɪsən tə ðə prəˌnʌnsiˈeɪʃən ɪn ˈjuːkeɪ ɔː ˈjuːɛs ˈɪŋglɪʃ. ðə ˈsɪmbəlz ə ˈsʌmtaɪmz ˈsɪmɪlə tə ðə ˈlɛtəz ˈjuːzd ɪn ˈɪŋglɪʃ, bət ðeə ə ˈsʌm ɪmˈpɔːtənt ˈdɪfrənsɪz. tə siː haʊ iːtʃ ˈsɪmbəl ɪz prəˈnaʊnst, lʊk ət ðə lɪst ˈgɪvən ət ðə bɪˈgɪnɪŋ əv ðə ˈdɪkʃənəri ənd ˈlɪsən tə ðeə prəˌnʌnsiˈeɪʃənz. ðɪs lɪst ʃoʊz ˈjuːkeɪ ənd ˈjuːɛs prəˌnʌnsiˈeɪʃənz təˈgɛðə səʊ ðət juː kən kəmˈpeə ðɛm. nəʊt ðət sʌm saʊndz ə faʊnd ˈəʊnli ɪn ˈjuːkeɪ ˈɪŋglɪʃ ɔː ˈəʊnli ɪn ˈjuːɛs ˈɪŋglɪʃ./