Phonetics and Phonology

Lesson: 01

1. The _____ component provides a detailed analysis and description of speech sounds with particular emphasis on articulatory phonetics.

phonology	phonetic	Semantic	Pragmatic	b

2. The _____ component examines the internal structure of simplex and complex word forms.

Semantic	phonetic	phonology	Pragmatic	c

3. In _____ words are arranged into a certain order.

Pragmatic	phonetic	Morphology	Syntax	d

4. In ____, beginnings and endings of the words are changed to adjust the meaning.

morphology	phonetic	Pragmatic	Semantic	b

5. Through ____ , the meaning itself can be affected by the arrangement of words.

phonology	phonetic	Semantic	Pragmatic	c

6. The branch of linguistics in which by the knowledge of the speaker about what the hearer will understand is _____.

phonology	phonetic	Semantic	Pragmatic	d

7. Sets of phonemes and sound patterns are dynamic; as in _____ speech.

isolated	connected	random	fixed	b

8. Sets of phonemes and sound patterns are _____ as in isolation within a human language.

dynamic	connected	static	random	c

9. Human sounds are divided into ___ broad categories.

2	3	4	5	a

10. A consonant is a speech sound in which air is at least _____ blocked.

fully	partly	once	twice	b

11. _____ is a sound in which there is no obstruction found and the air passes through the cavity freely.

vowel	monothong	consonant	nasal	a

12. A _____ is classified in terms of the places and manners of articulation and voicing

vowel	monothong	consonant	nasal	c

13. A vowel is classified in terms of the position of tongue, the part of tongue and ____.

Air flow	Jaw opening	voicing	Lip-rounding	d

14. Vowels are further classified into two terms; pure vowels and _____.

monothong	diphthongs	Soft vowel	Long vowel	b

15. Pure vowels are known as_____.

monothong	diphthongs	Soft vowel	Long vowel	a

Phonetics and Phonology

Lesson: 02

Sound	*Category*	*Qty*	*voicing*		*Qty*	*IPA*	*Examples*
Total English Sound are **44**	Vowels	**20**	Diphthong		**8**	eɪ aɪ ɔɪ əʊ aʊ ɪə eə ʊə	ɪə peer eə pair ʊə poor eɪ bay aɪ buy ɔɪ boy əʊ no aʊ now
			Monothongs (Pure Vowels)	Short vowels	**7**	ɪ e æ ʌ ɒ ʊ ə	ɪ pit e pet æ pat ʌ putt ɒ pot ʊ put ə another
				Long vowels	**5**	iː ɑː ɔː uː ɜː	iː bean ɑː barn ɔː born uː boon ɜː burn
	Consonants	**24**	Plosives		**6**	p bt d k g	p pin b bin t tin d din k kin g gum
			Nasals		**3**	m n ŋ	m sum n sun ŋ sung
			Fricatives		**9**	F v θ ð s z ʃ ʒ h	f fine v vine θ think ð this s seal z zeal ʃ sheep ʒ measure h how
			Affricates		**2**	ʧ ʤ	ʧ chain ʤ Jane
			Approximants		**4**	l r w j	l light r right w wet j yet

Phonetics and Phonology

Lesson: 03

1) **Phonology** is the study of how sounds are organized in individual languages.
2) Phonology focuses on the **organization of sounds** by studying speech patterns.
3) The key words for describing phonology are '**distribution'** and '**patterning'** related to speech
4) **Phonologists** may look into questions like – why there is a difference in the plurals of cat and dog.
5) **Phonetics** is the study of actual process of **sound making**.
6) Phonetics has been derived from the **Greek** word '**phone'** meaning **sound or voice**.
7) **Phonology** covers the domain of speech production and its transmission and reception.
8) A **phone** is a sound (or a segment) which has some physical feature and the term is mostly used in a **non-technical** sense.

9) A **phoneme** is the smallest meaningful unit of sound (therefore, a smallest unit in phonology) in a language and this meaningful unit of sound is one that will change one word into another word.
10) Linguists have also defined **phoneme as a group or class of sound** events having common patterns of articulation.
11) If phoneme is a group then **allophones are the group members**.
12) An **allophone** is a definable systematic variant of a phoneme.
13) Variants do not change meaning (and we simply take them as alternate sounds), they are called **allophone**.
14) **Phone** is a sound pattern having some **acoustic features**.
15) **Phoneme** is a group of sound having the ability to change meaning.
16) Phonetics as a field of study has a long history, going back certainly to well over **two thousand** years ago.
17) The **central** concerns in phonetics are the **discovery** of how speech sounds are produced; how they are used in spoken language; how we can record speech sounds with written symbols and how we hear and recognize different sounds.
18) In first area (**articulatory phonetics**) when we study the production of speech sounds we can observe what speakers do (**articulatory observation**) and we can try to feel what is going on inside our vocal tract **(kinesthetic observation**).
19) The second area (**acoustic phonetics**) is where phonetics overlaps with phonology.
20) Usually in **phonetics** we are only interested in sounds that are used in meaningful speech,

21) **Phoneticians** are interested in discovering the range and variety of sounds used this way in all the known languages of the world. This is sometimes known as **linguistic phonetics**.
22) Finally, the **auditory** aspect of speech is very important: the ear is capable of making fine discrimination between different sounds, so much so that sometimes it is not possible to define in articulatory terms precisely what the difference is.
23) **Articulatory** phonetics deals with studying the making of single sounds by the vocal tract.
24) In **articulatory** phonetics where we study the way in which speech sounds are made ('articulated') by the vocal organs.
25) Articulatory phonetics derives much of its descriptive terminology from the fields of **anatomy** and **physiology**, and is sometimes referred to as **physiological phonetics**.
26) **Articulation** has traditionally held a **central** place in the training of phoneticians.
27) The classification of sounds used in the International Phonetic Alphabet (IPA is based on **articulatory variables.**
28) **Acoustic phonetics** is related to the study of physical attributes of sounds produced by the vocal tract.
29) In **acoustic phonetics** we studies the physical properties of speech sound as transmitted between mouth and ear
30) It is primarily dependent on the use of instrumental techniques of investigation such as **Praat** software
31) The physical 'facts' of speech sounds are as **duration, formants F1, F2** and **F3,** etc.
32) **Auditory** phonetics deals with understanding how human ear perceives sound and how the brain recognizes different speech units.
33) Auditory phonetics studies the perceptual response to speech sounds as mediated by **ear**, **auditory nerve** and **brain**.
34) **Auditory** phonetics is a very less well-studied area of phonetics, mainly because of the difficulties encountered as soon as one attempts to identify and measure **psychological** and **neurological** responses to speech sounds
35) . On the other hand, anatomical and physiological studies of the ear are well advanced, as are techniques for the measurement of hearing, and the clinical use of such studies is now established under the headings of **audiology** and **audiometry**.

Phonetics and Phonology

Lesson: 04

1) **Descriptive** phonetics provides an account of how different languages and accents are pronounced.
2) **Prescriptive** phonetics states how they ought to be pronounced.
3) **Experimental** phonetics, aimed at the development and scientific testing of hypotheses.
4) Experimental phonetics is **quantitative** (based on numerical measurement).
5) In the **acoustic** field we examine the relationship between articulation and the resulting acoustic signal, and look at physical properties of speech sounds in general.
6) In the **auditory** field we do perceptual tests to discover how the listener's ear and brain interpret the information in the speech signal.
7) T**hree** areas of experimental phonetics in 1967:
    a. Stress in respiratory activity
    b. The nature of vowel quality
    c. Perception and production of speech address
8) Like other areas of grammar, a major change in the theory of phonology came about in the **1960s**
9) **Morris Halle** and **Noam Chomsky** showed that there were many sound processes which, while they are observable in the phonology, are actually regulated by grammar and morphology.
10) In order to highlight phonological rules, an elaborate method of writing in **an algebra-like style** was evolved: this can be seen in the best known generative phonological treatment of English (The Sound Pattern of English by Chomsky and Halle, 1968).
11) Following are the theories that have stemmed from 'generative phonology':
    a. Auto segmental phonology
    b. Metrical phonology
    c. Lexical phonology
    d. Optimality theory
12) Most of the movements relevant to speech take place in the **mouth and throat** area (though we should not forget the activity in the chest for breath control).
13) Parts of the mouth and throat area that we move when speaking are called **articulators**.
14) In articulatory phonetics, we study the **principal articulators** (such as **tongue, lips, lower jaw and the teeth, velum or soft palate, uvula** and **larynx)**
15) and other processes related to speech production. This includes the features of various sounds such as vowels and consonants and their specific properties including places and manners of articulation, phonation, etc.
16) The process of speech production mainly includes **respiration, phonation, articulation** and **resonance**.

17) In order to produce speech, we need the air stream mechanism (so that the process of speech is activated), the exploitation of the air stream at larynx (this process is called **phonation or voicing**),
18) The modification of the air passage with the help of articulators at the cavity (either oral or nasal) and finally the transfer of energy.
19) In phonetics, **speech production** is a term used for the activity of the respiratory, phonatory and articulatory systems during speech, along with the associated processes required for their co-ordination and use.
20) A contrast is usually drawn with the **receptive aspects** of spoken communication, such as speech **perception** and **recognition**.

21) As the anatomy of speech, some experts (such as **Ladefoged**) highlight the following **four** main components—
    a. The air stream process,
    b. the phonation process,
    c. the oro-nasal process, and
    d. the articulatory process.
22) The **airstream** process includes all the ways of pushing air out that provide energy for speech.
23) The **phonation** process is the name given to the actions of the vocal folds.
24) A sound wave is the pattern of disturbance caused by the movement of energy traveling through air (sound always travels in the shape of waves in the air).
25) **Sound** basically consists of small **variations in air pressur**e that occur very rapidly one after another.
26) These variations are caused by actions of the speaker's vocal organs that are (for the most part) superimposed on the outgoing flow of lung air.
27) In the case of **voiced** sounds, the vibrating vocal folds chop up the stream of lung air so that pulses of relatively high pressure alternate with moments of lower pressure.
28) Variations in air pressure in the form of sound waves move through the air somewhat like the ripples on a pond. When they reach the ear of a listener, they cause the eardrum to vibrate.
29) A **graph of a sound** wave is very **similar** to a graph of the **movements of the eardrum**.
30) Physical features of sound waves are **amplitude, its loudness** and **its time duration of vibration**.
31) The possibility of the airstream going out through the mouth, as in [v] or [z], or the nose, as in [m] and [n], is determined by the **oro-nasal process**.
32) Consider the consonants at the end of **rang, ran, ram (ŋ, m, n) which are all nasal sounds**.
33) In the formation of these sounds in a sequence, the point of articulatory closure moves forward, from **velar in 'rang'**, through **alveolar in 'ran'** and to **bilabial in 'ram'**.
34) When it is lowered and there is an obstruction in the mouth, we say that there is a **nasal consonant**.
35) Raising or lowering the **velum** controls the oro-nasal process, the distinguishing factor between oral and nasal sounds.

Phonetics and Phonology: Lesson: 05

Place of Articulation

Place	Meaning	The sounds produced
Bilabial	Articulated by the lower lip and upper lip	/m/ /b/ /p/ /w/
Labio-dental	Articulated by the lip and teeth	/f/ /v/
Lingua-dental	Articulated by the tongue and teeth	/θ/ /ð/
Lingua-alveolar	Articulated by the tongue and gum ridge	/t/ /d/ /s/ /z/ /ʧ/ /ʤ/ /n/ /l/ /ţ/
Lingual palatal	Articulated by the tongue and hard palate	/ʃ/ /ʒ/ /r/ /j/
Lingua-velar	Articulated by the tongue and soft palate(velum)	/k/ /g/ /ŋ/ (/w/
Glottal	Articulated by the glottis	/h/

Manner of Articulation

Manner	Meaning	Sound
stop	We (start or finishing point) stop the air completely.	/p/ /b/ /d/ /t/ /k/ /g/
Fricative	We let the air leak from a narrow passage.	/f/ /v/ /s/ /z/ /ʃ/ /ʒ/ /θ/ /ð/ /h/
Affricate	We block the air (starting or finishing point) and then abruptly release it.	/ʤ/ /ʧ/
Nasal	We push air out from our nose.	/m/ /n/ /ŋ/
Liquid (approximant)	We position the tongue in a manner that obstructs the airflow but without causing a friction (as in the case of /s/ or /f/, hence the term fricative)resulting in a consonant with a vowel-like quality.	/r/ /l/
Glide/Semivowel (Approximants)	We begin a sound from a vowel position and end it in a consonant's.	/w/ /j/

- **Bilabial:** This sound is made with two lips (for example, /p/ and /b/). The lips come together for these sounds.
- **Labiodental:** This sound is made when thelower lip is raised to touch the upper front teeth (for example, /f/ and /v/).
- **Dental:** This sound is made with the tongue tip or blade and upper front teeth. For example, say the words *thigh, thy* and you will find the first sound in each of these words to be dental.
- **Alveolar:** This sound is made with the tongue tip or blade and the alveolar ridge.You maypronounce words such as *tie, die, nigh, sigh, zeal, lie* using the tip of thetongue or the blade of the tongue for the first sound in each of these words (which are alveolar sounds).

- **Retroflex:** This sound is produced when the tongue tip curls against the back of the alveolar ridge. Many speakers of Englishdo not use retroflex sounds at all but it is a common sound in Pakistani languages such as Urdu, Sindhi, Pashto, Balochi and Punjabi.
- **Palato-alveolar:** This sound is produced with the tongue blade and the back of the alveolar ridge (for example, first sound in each of words like *shy*,*she, show*)
- **Palatal:** This sound is produced with front of the tongue and the hard palate (such as the first sound in *'yes'*.
- **Velar:** This sound is produced with back of the tongue and the soft palate (such as /k/ and /g/).

1. **Vowel** makes very little obstruction,
2. **Plosive** consonant makes complete obstruction.
3. Air/sound obstruction is known as the **manner of articulation**
4. A **stop sound** [p] is pronounced by blocking the air passage completely in the oral cavity.
5. Consonantal sounds are divided, in terms of their manner of articulation, into **two** major types
    (1) **Obstruents** (such as stops, fricatives and affricates)
    (2) **Sonorants** (such as nasals, liquids and glides).
6. **Stop** refers to any sound which is produced by a complete closure in the vocal tract, and thus traditionally includes the class of plosives.
7. Both **nasal and oral** sounds can be classified as stops, though the term is usually reserved for the latter.
8. The term 'stop' is used in the phonetic classification of consonant sounds on the basis of their manner of articulation (it refers to a sound made when a complete closure in the vocal tract is suddenly released; the air pressure which had built up behind the closure rushes out with an explosive sound).
9. Thus the sound stop has **two** processes; the closure of air passage (stop) and the burst (release).
10. Plosive consonants are one type of **stop consonant**.
11. **Nasal** stops include [m, n, ŋ].
12. A **fricative** consonant is made by forcing air through a narrow gap so that a hissing noise is generated. strident
13. Fricative are divided into **two** groups
    (1) Sibilant
    (2) Strident
14. A distinction is sometimes made between sibilant or strident fricatives.
15. **Sibilant** fricatives (such as s, ʃ) are **strong** and **clearly** audible
16. **strident** fricatives are **weak** and **less** audible (such as θ, f).
17. BBC pronunciation has **nine fricative** phonemes: f, θ, s, ʃ, h (voiceless) and v, ð, z, ʒ (voiced).
18. **Approximant** is a phonetic term used to denote a consonant which makes **very little** obstruction to the airflow.
19. Traditionally **approximants** have been divided into **two** groups:
    (1) Semivowels

(2) liquids

20. "**semivowels**" such as [w] in English 'wet' and [j] in English 'yet', which are very similar to close vowels such as [u] and [i] but are produced as a rapid glide.
21. "**liquids**" sounds which have an identifiable constriction of the airflow but not the one that is sufficiently obstructive to produce fricative noise. This category includes laterals such as English [l] in 'lead' and non-fricative [r] (phonetically ɹ) as in 'read'.
22. BBC English has **four approximant** sounds which include [l] as in light, [r] as in right, [w] as in wet and [j] as in yet.
23. **Affricate** is a type of consonant consisting of a plosive followed by a fricative with the same place of articulation (e.g., [tʃ] and [dʒ] sounds at the beginning and end of the English words 'church' and 'judge').
24. [tʃ], [dʒ] as affricate phonemes are symbolized **č, ǰ** by **American** writers.
25. **Trap**, **Flap** and **Trill** are also called **central approximants**.
26. In the case of tap and flap, there is only **one rapid contact**.
27. In the case of trill [r] the tongue is **striking continuously** (rrrrr) as the stricture of intermittent closure.
28. **Tap** is up and down movement of the top of the tip of tongue.
29. Example of Tap is '**pity'** with typical American accent [ɾ].
30. **Flap** is front and back movement of tongue tip at the underside of tongue with curling behind.
31. Flap is found in **abundance** in Indo-Aryan (IA) languages [ɽ].
32. In the production of **trill** the articulator is set in motion by the current of air [r].
33. It is a typical sound of Scottish English as in words like '**rye'** and '**row'**.