

**BHARATI VIDYAPEETH
(DEEMED TO BE UNIVERSITY), PUNE, INDIA
PhD Entrance Test – 2023**

SECTION-II: Speech Language Pathology- 35 Marks

CLINICAL LINGUISTICS

- Language acquisition, semantics, syntax pragmatics, theoretical issues, Deixis and anaphora, definiteness, discourse [focus on understanding normal and disordered language].
- Neuro linguistics – Language and the brain – localization – left brain - right brain differences – coding and decoding – Neuro anatomical and Neuro physiological bases of language learning and dysfunction – linguistic and Psycho – neuro linguistic models of language pathology
- Psycho linguistics and language acquisition – issues involved in language acquisition – motherese / Child directed speech – second language acquisition – language acquisition in bi- and multi-lingual environments.
- Issues in Socio-linguistics-Standard and Non-standard Dialects, Regional and Social dialects Stylistic Variation of Language, Gender and Language, Registers, Creole, Pidgins, relation between language culture, religion, politics etc. Language deficiency.
- Multilingual and cultural issues. A brief introduction to the major language families of the world – Language Families and Major Languages of India. Linguistic determinism Linguistic relatively, Sapir-Whorf Hypothesis. Cultural diversity of India, Cultural issues in Verbal and non-verbal communication. Multicultural and multilingual issues in Rehabilitation with special reference to India.

SPEECH SCIENCE AND PRODUCTION

- Physiology of speech: physiology of respiration, Physiology of laryngeal function, Vocal fold physiology, Neuro-Physiology of larynx and vocal mechanism in relation to production of voice/speech. Electrophysiological of larynx. Neurophysiological bases of speech, Neuromotor mechanism of the articulatory, phonatory and respiratory systems.
- Aerodynamics of speech production, Upper airway dynamics, lower airway dynamics. Aerodynamics of vowels, aerodynamics of consonants: stops, fricatives and nasals. Prosody – Normal aspects and clinical implications (Intonation, stress, rhythm) Acoustics of speech – Acoustic theory of speech production, Acoustic phonetics, Basics, acoustics of vowels and consonants, review and state of the art.
- Spectrography – various types of spectrograms, spectrographic cues for vowels and consonants, identification of place, manner, voicing and aspiration using wide band bar type spectrogram.
- Application of spectrography in basic and applied research. Techniques of speech processing and analysis, Speaker recognition system and speech recognition system, Speech synthesis methods, Speech analysis in forensic sciences, Infant cry – features of infant cry, spectrographic patterns of normal cry and cry in clinical population, Analysis of laughter features of laughter, spectrographic patterns of laughter.

SPEECH & LANGUAGE PROCESSING

- Phonetic perception, Perception of vowels & consonants- static and dynamic cues, effect of co articulation, Consonant perception, factors affecting consonant perception, effect of co articulation. Related developments in speech perception
- Spoken word recognition- Stages and word recognition -lexical concept, lexical access, phonological encoding, and production. The input to the lexicon-lexical access from spectra, constraints of temporal structure- Models of Spoken word recognition. Visual word recognition - models and theories; word and non word naming, acquired dyslexia and role of phonology in word recognition.

- Sentence comprehension and processing of components of language - parallel and serial models of processing, modularity and information sources, accounts of parsing, parsing issues, ambiguity in parsing, strategies for disambiguation. Reference and anaphora. Discourse comprehension and expression. Sentence processing – basic capacities for perceiving phonetic contrasts - native language contrasts, foreign language contrasts, coping with variability in speech signal. Prosodic organization in native language, processing of phonological, morphological, syntactic, semantic and pragmatic aspects of language. Role of memory and attention

VOICE DISORDERS

- Pathophysiological, Acoustic, aerodynamic and perceptual changes in different voice disorders. Such as Paediatric voice disorders, Effects of ageing in voice, Neurogenic voice disorders- Differential diagnosis and management, Endocrinal Voice disorders and voice disorders related to transsexuals.
- Issues related to professional voice and its care
- Recent advances in measurement, assessment and management of voice and its disorders Recent advances in Laryngectomy

FLUENCY DISORDERS

- Dimensions of fluent speech- review of recent advances and findings regarding-Development, Perspectives in fluency disorders (developmental, childhood and adult). Factors affecting fluency of speech, Theories (Learning theories, Behavioral theories, Organic theories, auditory perceptual theories), Spontaneous recovery. Current linguistic theories, linguistic and metalinguistic aspects of fluency disorders. Articulatory dynamics, laryngeal dynamics, prosodic, speech motor control viewpoints in stuttering. Severity of stuttering –theoretical foundations and methods.
- Neuro anatomical, neurophysiologic and auditory processing aspects of fluency disorders.
- Cluttering, Nature, characteristics, differential diagnosis, and current status Neurogenic stuttering, Drug-Induced stuttering, Prevention, relapse of stuttering, Naturalness, QOL and related issues.
- Evidence based management of children and adults with stuttering. Review of recent advances of therapy in stuttering. Efficacy and outcome measures of stuttering therapy Assessment and diagnosis of disorders of fluency.

LANGUAGE ACQUISITION AND LANGUAGE DISORDERS IN CHILDREN

- Critical review of current theories of language acquisition and its applications to assessment and intervention. Overview of genetic, neuro-anatomical and neurophysiological correlates of language development.
- Language development in exceptional circumstances extreme deprivation, bilingual language acquisition, visual handicap, Mental retardation, Williams’s syndrome, hearing loss, language learning disabilities and dysphasia and acquired childhood aphasia.
- Contemporary concept and issues in Autism Spectrum disorders, SLI, and ADD/ADHD.
- Cross cultural consideration in assessment and management of developmental language disorders
- Specific assessment and intervention approaches for various developmental language disorders
- Contemporary concept and issues in LD. Dyslexia: Neurobiology of reading and writing, Metalinguistics (Phonological awareness, reading etc.), Evaluation and treatment approaches.

ADULT LANGUAGE DISORDERS

- Anatomy of the Central Nervous system, Neuronal organization (area as well as function) in human beings and animals. Concepts and studies related to: Hemispheric lateralization, Hemispheric Asymmetry (Structural + Functional) cerebral plasticity, cerebral maturation & its significance in

development. Neurohistological procedures, radiological imaging, magnetic imaging, CSF studies, behavioral measures (Dichotic listening), Tachistoscopic presentation, Dichaptic studies etc. Neuroanatomical organization in bilinguals and multilingual. Physiology of nerve conduction, Types of synapses, Types of neurotransmitters, Synthesis and activation of neurotransmitters; neurotransmitters in normal and disordered population

- Neurophysiology of aphasia and related disorders. Language and cerebral dominance. Connectionist explanation of aphasia. Lesion size, lesion location and localization syndromes. Speech language and the brain. Etiology and classification of aphasia. Assessment and diagnosis in Neuro communication disorders. General principle. Different perspectives on aphasia, (linguistic, neurological, cognitive etc), pragmatics. Aspects of bilingual aphasia in illiterates and sign language users. Neuroanatomical changes with aging, structural changes, morphological changes, microscopic anatomic changes, neurochemical changes. Neurophysiological changes with aging: cerebral blood flow, EEG changes, Evoked Potential changes, Sleep studies.
- Testing of verbal comprehension, non verbal skills, verbal expression, and functional communication. Test interpretation, testing right hemisphere function and assessing the bilingual client, Advances in aphasia rehabilitation, (psychological sociolinguistic and pragmatic approaches) and treatment efficacy
- Neurocognitive models, Role of attention and memory – STM, LTM, Other processes – Abstraction, Reasoning, Logical aspects, organization, planning and executive processes. Acquired reading and writing disorders
- Dementia and communication - causes, types and language changes, assessment, Treatment and long term management, Traumatic brain injury, consequences of TBI, cognitive- linguistic issues in communication assessment, rehabilitation outcomes. Other adult language disorders (characteristic assessment, intervention and issue in primary progressive aphasia, sub cortical aphasia, schizophasia and RHD.

CLINICAL PHONOLOGY AND MOTOR SPEECH DISORDERS

- Phonological processes- review and recent advances, different types, its analysis, phonological process patterns in various communication disorders, International Phonetic Alphabet transcription. Phonological awareness - development, assessment and clinical implications. Recent studies. Phonotactics and metalinguistic abilities in phonological disorders. Application of phonological theories in evaluation and management of phonological disorders, Metaphon theory and therapy
- Co-articulation – nature, definitions and kinds. Models – feature based, syllabic and allophonic based, target based, phonologically based. Physiological studies on co-articulation- effects of co-articulation (position and juncture effect, transition effect, direction effect); Co-articulation in Speech disorders. Management of co-articulation in speech disorders and remediation.
- Neurophysiology and functional development of sensori-motor control, Sensory motor processing in speech / correlates of oral sensori-motor dynamics- Neural substrates and findings in dysarthria and apraxia. Models of speech processing in motor speech disorders- Task dynamic models, van Der Merwe's model, DIVA's model etc.
- Recent advances in Dysarthria (pediatric and adult): Characteristics, assessment, differential diagnosis, management (prosthetic, surgical, medical, & behavioral- facilitatory & compensatory), Issues related to vegetative therapy/NDT/sensory motor training for oral musculature, Role of AAC in dysarthria. Recent advances in Apraxia (pediatric and adult): Characteristics, assessment, differential diagnosis, management- evaluation of various approaches to apraxia treatment, Issues & trends regarding apraxia prognosis, Role of AAC in apraxics.
- Dysphagia – Anatomical & Maturational considerations, Role of respiration. Physiology of suck-swallow- breath sequence, overview of phases of swallowing, development of feeding skills, Alternate methods of nutritional intake. Disorders of swallowing in children and adults Etiological classification: Medical, GI tract, respiratory, CNS/PNS damage, cardiac effects, structural, abnormalities and

iatrogenic. Assessment – Clinical examination, subjective evaluation of swallow function, feeding skills, GERD. Objective methods - Radiological and Instrumental evaluation
Multidisciplinary management of dysphagia - Issues and concerns, Medical and Non-medical treatment.