

Ph.D. IN AUDIOLOGY

UNIT 1

AUDITORY PHYSIOLOGY

- External ear: Anatomy & Physiology, age related changes and its application
- Middle ear: Anatomy & Physiology, impedance concept and its application
- Cochlea: Anatomy and Physiology, theories of hearing
- Auditory nerve and Vestibular system: anatomy and physiology, Anatomy of other cranial nerve
- Central auditory pathway: anatomy and physiology of brainstem, subcortical and cortical auditory areas.

UNIT 2

BASICS IN AUDITORY PERCEPTION

- Loudness: MAP and MAF, measurement and factors affecting
- Pitch: theories, measurement and factors affecting
- Temporal processing: measurement and factors affecting
- Object perception: auditory pattern perception
- Masking: Types, physiology and application

UNIT 3

PSYCHOPHYSICS OF AUDITION

- Loudness perception in auditory disorders: adaptation, fatigue and recruitment
- Pitch perception in auditory disorders:
- Temporal perception auditory disorders
- Binaural Hearing: Localization and lateralization, physiology and factors affecting binaural hearing
- Perception of music: scales, notes and factors affecting music perception

UNIT 4

IMPLANTABLE DEVICES FOR INDIVIDUALS WITH HEARING IMPAIRMENT

- Bone anchored hearing aids (BAHA) and middle ear implants: instrumentation, candidacy and benefit
- Cochlear implants: design and features, candidacy, factors affecting benefit
- Psychophysics of cochlear implants
- Habilitation of individuals with cochlear implants: adults and children
- Brainstem implant and mid brain implants: design and features, candidacy, factors affecting benefit

UNIT 5

PHYSIOLOGICAL ASSESSMENT OF THE AUDITORY SYSTEM

- Tympanometry and reflexometry: Principle, instrumentation, procedure
- Application of Immitance: tympanometry and reflexometry
- Non Audiological tests: MRI, fMRI, MEG, X-Ray, CT, PET, SPECT, lab tests.
- Oto acoustic emissions – classification, generation and instrumentation
- Oto acoustic emissions – Clinical application

UNIT 6

SPEECH PERCEPTION

- Theories of speech perception:
- Perception of vowels and consonants: cues for perception, relation between production and perception cues, role of co articulation
- Dichotic listening: Factors affecting and application
- Memory and speech perception
- Infant speech perception

UNIT 7

ELECTROPHYSIOLOGICAL ASSESSMENT OF THE AUDITORY SYSTEM

- Classification, instrumentation, methods of analysis & generators of auditory evoked potentials:
- Early and middle latency potentials: factors affecting recording and interpretation; application
- Late latency potentials: factors affecting recording and interpretation; application
- Steady state evoked potentials: factors affecting recording and interpretation; application
- Vestibular assessment: factors affecting recording and interpretation; application

UNIT 8

REHABILITATIVE AUDIOLOGY

- Digital technology in hearing instruments: design and features, electro acoustic performance
- Hearing device selection procedures: subjective and objective techniques
- Assessment and Management of individuals with special listening needs: Individuals with deaf blindness, MR, autism, cerebral palsy, LD, multiple disability
- Tinnitus and Hyperacusis: Theories, assessment and management
- Audiology in practice: National and international standards, acts and legislations, medico legal aspects

UNIT 9

CENTRAL AUDITORY PROCESSING DISORDERS

- Theoretical basis and classification of (C)APD
- Behavioral tests in the assessment of (C)APD: Screening and diagnostic tests for children and adults
- Objective test in the assessment of (C)APD: Screening and diagnostic tests for children and adults
- Management of (C)APD: Deficit based strategies and management
- Factors affecting assessment and management of (C)APD

UNIT 10

SPEECH PERCEPTION IN CLINICAL POPULATION

- Perception of vowels, consonants, coarticulation and suprasegmentals in individuals with different degrees, types and audiogram configuration
- Perception of speech through other modalities: segmental and supra segmental perception through visual and tactile modalities
- Speech perception in cochlear implantees: Factors affecting perception
- Speech intelligibility: subjective and objective methods and factors influencing
- Speech perception in adverse listening condition: affect of noise reverberation

PATTERN OF QUESTION PAPER

There will be only one question paper carrying 80 marks of three hours duration.

The question paper will consists of two parts – Part A and Part B. Part A is for 40 marks and Part B is for 40 marks.

Part – A will cover 40 objective type questions (multiple choice) of one mark each and Part B will have Ten short essay type questions carrying eight marks each.

The candidate has to answer all the questions of Part A and any FIVE questions of Part B.