



**THE J&K STATE PARA-MEDICAL COUNCIL
GOVERNMENT MEDICAL COLLEGE JAMMU.**

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SYLLABUS

Diploma Audiometry / Speech Therapy

➤ **Audiology**

(Marks 25)

✓ **Sound and Hearing**

- Definition of sound
- Generation and transmission of sound
- Physical and psychological attributes of sound
- Range of human hearing
- Structure of the ear, different parts of the ear
- Age-wise behavioral responses to sound
- Description of hearing
- Functions of hearing, role of hearing in learning

✓ **Hearing Loss**

- Definition and meaning of hearing loss
- Causes and types of hearing loss
- Effects of hearing loss
- Signs & symptoms of hearing loss
- Prevention of hearing loss
- Early identification and its importance
- Associated problems

✓ **Evaluation of hearing**

- Methods of testing hearing, tuning fork, audiometry, parts of an audiometer, audiogram
- Procedure for obtaining an audiogram, different types of audiograms
- Factors that affect hearing evaluation

- Informal testing, methods of screening and different conditions for hearing testing, use of different stimuli in rural set/ups.
- Care and maintenance of equipment, preparation and maintenance of check list
- List of equipment, specifications for the same

✓ **Hearing aids & Earmolds**

- Definition of hearing aid
- Need for a hearing aid
- Different parts of a hearing aid
- Different types of hearing aids
- Earmold, role of earmold, making custom earmolds
- Selection of conventional hearing aids

✓ **Counseling on use, troubleshooting and rehabilitation**

- Use, care and maintenance of hearing aid
- Trouble shooting and minor repairs of hearing aids
- **Counselling –**
 - ✚ On hearing aid acceptance, use and care
 - ✚ On auditory learning
 - ✚ On speech and language intervention
 - ✚ Home training
- Role of Speech and Hearing technician in relation to the school for the deaf/retarded, special schools for spastics speech and hearing units and centres, other rehabilitation centres, P.H.Cs.
- Organization of community awareness programmes, exhibition and selecting the materials required, parent meeting. Team approach and role of speech and hearing technician in the team.
- Early identification, Therapy and follow up
- Government schemes available for the welfare of the handicapped
- List of addresses for referral points

➤ **Speech and Language Pathology**

(Marks 25)

✓ **Introduction to communication, language & Speech.**

- Definitions of communication, language & speech
- Interrelation between speech, language & hearing
- Prerequisites of communication: speaker, listener, speech chain
- Functions of communication
- Types of language: Non-verbal: signs, symbols, gesture. Verbal: speech

- Parameters of language: orientation to phonology, semantics, syntax & pragmatics
- Parameters of Speech: voice, articulation, fluency, prosody
 - + Voice: pitch, loudness, quality;
 - + -Fluency: rate, continuity, effort;
 - + -Prosody: stress, intonation & rhythm

✓ **Speech mechanism & speech production**

- Structure and functions of the speech mechanism

- + Nervous system
- + Respiratory system
- + Phonatory system
- + Resonatory system
- + Articulatory system

- Description of the speech sounds

- + Voicing
- + Manner of articulation
- + Place of articulation

✓ **Acquisition / Development of Language and speech**

- Characteristics of normal speech & language and communication
- Stages in the development of language and the important milestones
- Stages in the acquisition of speech sounds/ phonology & important milestones
- Development of communication
- Factors affecting the acquisition of speech, language & communication

✓ **Disorders of speech and Language**

- Classification of the disorders
- Disorders of language: general behaviours, language characteristics: expressive & receptive
 - + Mental retardation
 - + Autism
 - + Cerebral palsy
 - + Childhood aphasia
 - + Attention Deficit disorder

✓ **Disorders of speech : General Characteristics, symptoms**

- Disorders of speech: general characteristics, symptoms
 - + Disorders of voice: pitch, quality

- ✚ Disorders of articulation: structural, neurological, environmental
- ✚ Disorders of fluency: NNF, stuttering, neurogenic stuttering, cluttering

✓ **Prevention and Early identification of communication disorders**

- Definition, Types of prevention
- General preventive measures
- Checklist/ Tools for prevention and Early identification of communication disorders
- Guidance to parents
- Screening tools/ High Risk Register

➤ Basic Medical Sciences related to speech & Hearing. (Marks 15)

- ✓ General *introduction*, definitions. Coronal / saggital / plane) Planes. Definition of anatomy, morphology, physiology, histology, embryology.
- ✓ Definition of Cell and organelles, tissue, organ system, specialized tissues like nervous tissue, vascular tissue, muscle and bone tissue
- ✓ Nervous system: Definition of neuron, synapse, reflex action, bio electrical phenomena, action potential, depolarisation, division and functions of the nervous system, brain – general lobes, reticular formations, basal ganglia, cerebellum, circle of willis, cranial nerves, spinal cord, CSF – formation & flow.
- ✓ Circulatory system: Definition of capillaries, arteries, veins, cardiac cycle, blood brain barrier, aneurysm, vascular shock – its reference to aphasia / speech disorders.
- ✓ Respiratory system: General outline, detailed study of trachea, larynx and nasopharynx, mechanism of respiration – internal and external influence, nervous control – vital capacity – tidal volume, residual air, artificial respiration (in brief).
- ✓ Definition of inflammation, infection, tumor – benign & malignant, tissue healing
- ✓ Genetics :introduction – structure of DNA and RNA, karyotyping, family tree (pedigree chart), symbolic representation , inheritance, autosomal dominant, autosomal recessive, sex chromosomal disorders, structural aberrations, mutation (in brief).
- ✓ Endocrine system : Definition of harmone, functions of thyroid hormone, growth harmone, androgen, testosterone and its influence in voice disorders.
- ✓ Anatomy & Physiology of external, middle & inner ear, auditory pathways, vestibular pathway. Diseases of the external middle and inner ear leading to hearing loss: Congenital malformations, traumatic lesions, infections, management of middle ear and Eustachian tube disorders.
- ✓ Other causes of hearing loss – Facial paralysis, Tumors of the cerebello- pontine angle, Acoustic neuroma. Infection and management of inner ear diseases. Cochleo-vestibular diseases and its management.

Anatomy & Physiology of pharynx & oro-peripheral structures Causes of speech disorder, Disorders of the mouth, Tumors of the jaw and oral cavity, nasopharynx and pharynx, pharyngitis, Diseases of tonsils and adenoids.

- ✓ Oesophageal conditions: Congenital abnormality – Atresia, Tracheo-oesophageal fistula, Stenosis, Short oesophagus. Neoplasm – Benign, Malignant, Lesions of the oral articulatory structures like cleft lip, cleft palate, submucosal cleft, Velopharyngeal incompetence.
- ✓ Anatomy & Physiology of larynx – physiology of phonation / physiology of respiration.
- ✓ Congenital diseases of the larynx – difference between an infant and an adult larynx. Stridor – causes of infantile stridor. Disorders of structure – Laryngomalacia, Bifid epiglottis, Laryngeal web, Atresia, fistula, Laryngeal cleft, Tumors and Cysts, Laryngitis, Laryngeal trauma and Stenosis. Neuromuscular dysfunctions of the larynx – Vocal cord palsy, Spastic dysphonia, Hypothyroidism, gastro oesophageal reflux disorders, Laryngectomy, artificial larynx, oesophageal speech, tracheo oesophageal puncture.

➤ Psychology

(Marks 15)

- ✓ Meaning and definition of psychology - relevance to speech, hearing and language. Child development: motor, emotional, cognitive - intellectual and social, stages & relevance.
- ✓ Mental retardation: definition, causes, assessment and psycho/social and educational implications. Developmental skills - helping the child acquire age appropriate developmental skills. Psychological problems associated with speech and hearing disorders - temper tantrum, hyperactive behaviour, withdrawal tendency, aggressive behaviour, neuroses like phobia, autistic behaviour.
- ✓ Psychological testing - aims, factors affecting testing, developmental schedules, IQ test and their importance.
- ✓ Attitude of parents and of the client towards handicap and rehabilitation procedures.
- ✓ Behaviour therapy and play therapy.

➤ Community Based Rehabilitation

(Marks 15)

- ✓ Assessment of communication disorders
 - ✚ **Case history** - Importance of case history, Procedure for obtaining case history, Methods of gathering information, Specific information to be collected w.r.t various disorders, Relevance of information to be included in case history, Identification, history and description of problem, Counter check of information gathered, Do's and Don'ts while taking case history
 - ✚ Arriving at provisional diagnosis by collecting and collating different information, Measures to be taken when contradictory findings are found
 - ✚ Making appropriate referrals to other relevant professionals, Ways of referral-reporting & requesting and informing parents/caregivers on diagnosis and prognosis.
 - ✚ Role of observation therapy in diagnosis and prognosis
- ✓ Management of communication disorders

- ✚ Team approach, Members of the Team: speech and hearing professionals, medical specialists, psychologists, special educators, regular school teachers, social workers, village leader and prospective employer/ institutions, Details of other referral points, Role of speech & hearing technicians in the team.
 - ✚ Bases of speech & language therapy and hearing intervention-common procedures in therapy
 - ✚ Planning speech therapy programme for articulation, voice, fluency, language Deviations and delays (including material and instruments needed), Implications and impact of hearing loss /mental retardation/ cerebral palsy
 - ✚ Analysing needs of the patients, planning short term and long term goals, activities & teaching aids for therapy, assessing progress, Recognizing small changes in progress
 - ✚ Imparting guidelines to the parents for practice of activities at home, Training parents as equal partners, Importance of speech and language stimulation
 - ✚ Reinforcers, methods of reinforcement
 - ✚ Tips on parent counseling and guidance
- ✓ Auditory training & speech reading
- ✚ Acceptance of hearing aid by self and family
 - ✚ Auditory training- need and its importance. General principles, steps in auditory training, Materials needed, Assessment of auditory performance, factors affecting auditory training-age of the child, type of hearing loss, intensity of stimuli and others. Methods of recording auditory response and progress, Games and activities for individual and group auditory training.
 - ✚ Speech reading, General principles, Methods of speech reading, Speech reading, cued speech, activities for speech reading in day to day communication, Specific planning for speech reading lessons, Factors (environment, speaker, language reader) affecting speech reading.
- ✓ Non/verbal communication
- ✚ Augmentative and alternative communication (AAC)- Definition
 - ✚ Types of AAC:
 - ✚ Aided- Definition and types of symbols with examples (objects, pictures, orthography, blissymbols), Low technology (communication boards, communication wallets, communication books & others) and high technology aids (few softwares), Dedicated and Nondedicated systems, Adaptation of aided systems to individual needs.
 - ✚ Unaided- Definition and types of symbols with examples (manual signs, pantomime, gestures, facial expressions), Introduction to sign languages: Finger spelling & basic vocabulary in American Sign Language, Indian Sign Language – basic vocabulary.
- ✓ Record keeping
- ✚ Different records (administrative and clinical) to be maintained, Documentation of diagnostic, clinical & referral reports.

➤ Education for Children with Special Needs

(Marks 25)

- ✓ Introduction to education
- ✓ Education of children with special needs
- ✓ Educational problems faced by children with
 - ✚ Hearing impairment
 - ✚ Mental retardation
 - ✚ Other communication disorders
- ✓ Approaches in teaching language to children with communication disorders
 - ✚ verbal approaches
 - natural and structured methods
 - unisensory and multisensory methods
 - ✚ non-verbal approaches
- ✓ Selection of appropriate communicational approaches for children with communication disorders
- ✓ Educational Programmes for Children with Communication Disorders.
 - ✚ Preparatory training
 - Parent-Infant Programme
 - Early Stimulation Programme
 - Mothers' Training Programme
 - Preschool Programme
 - ✚ Types of Educational Set-ups
 - Mainstreaming – inclusive and integrated education
 - Segregation: Special day classes, special day schools and special residential schools
 - ✚ Selection of appropriate educational set-ups for children with communication disorders
 - ✚ Measures to facilitate mainstreaming of children with communication disorders – like organising resource room facilities
 - ✚ Programmes and schemes for promoting mainstreaming of children with communication disorders – IEDC, DPEP, IEYCD
- ✓ Curricular Development / Adaptation & Instruction for Children with Communication Disorders
 - ✚ Identifying specific educational goals, and planning / implementing individualized educational programmes
 - ✚ Teaching curricular subjects (other than language) to children with communication disorders
 - ✚ Parental participation in the educational process through home training

✓ Preparation / Use of Teaching Aids and Language Workbooks

- ✚ Teaching aids – Need, uses and types
- ✚ Language workbooks – contents, uses and advantages
- ✚ Linking language workbooks with other teaching aids

✓ Role of speech and hearing technicians in Education / Training in Children with Communication Disorders

- ✚ Facilities for children with MR
- ✚ Facilities for children with HI
- ✚ Facilities for children with CP
- ✚ Role in identifying and guiding them for appropriate vocations