31901/31951 **MM-1957**

Sl. No. 0036 Total No. of Pages : 2

I Semester M.Sc. Examination, February - 2025

(Scheme : CBCS)

AUDIOLOGY/SPEECH-LANGUAGE PATHOLOGY

Research Methods and Statistics in Speech-Language and Hearing

Time : 2 Hours **Max. Marks : 50**

Instruction : ***Answer all questions.***

I. 1) With suitable examples, List out frequently used methods of quantitative research in the field of speech and hearing. **[10]**

OR

2) Write short notes on : **[10]**

a) Extraneous variable v/s control variable.

b) Observational research

II. 3) a) Attempt an essay on evidence - based practice and it's recent advancements. **[10]**

b) Differentiate between withdrawal and reversal designs. **[5]**

OR

4) a) Discuss different types of time-series designs with examples from speech and hearing field. **[10]**

b) Differentiate between longitudinal & cross-sectional designs. **[5]**

P.T.O.

III. 5) a) Explain the scope of regression analysis in speech & hearing research. [5]

b) Write short notes on : [5]

i) Principal component analysis

ii) MANOVA

OR

6) a) Discuss the applications of various types of ANOVA in speech & hearing field. [7]

b) What are post-hoc tests? [3]

IV. 7) a) Write a short note on possible alternative analysis or steps to be taken in case of failure of assumptions underlying parametric tests. [10]

b) Compare and contrast Kruskal-Wallis test and Friedman test with suitable examples. [5]

OR

8) a) Differentiate between qualitative & quantitative data and explain the method of analyzing association between 2 attributes. [8]

b) Test the significance using appropriate non-parametric test : [7]

Pre scores	13	12	26	17	15	14
Post scores	21	18	25	20	19	16

31902 **MM-1958**

Sl. No. 0060 Total No. of Pages : 2

I Semester M.Sc. Examination, February - 2025

(Scheme : CBCS)

AUDIOLOGY

Auditory Perception

Time : 2 Hours **Max. Marks : 50**

Instruction : ***Answer all questions.***

I. 1) Discuss the significance of the Receiver Operating Characteristic (ROC) curve in Signal Detection Theory and how it is used to evaluate performance. **[10]**

OR

2) Discuss the staircase method for obtaining absolute thresholds, including the procedure and its advantages over classical methods. **[10]**

II. 3) a) Explain the phenomenon of recruitment and its impact on loudness perception in individuals with cochlear hearing loss. **[10]**

b) Write a note on loudness scaling. **[5]**

OR

4) Explain the perception of complex signals, focusing on the theories of pitch perception for complex sounds. **[15]**

III. 5) a) Discuss the differences in auditory filter shapes between individuals with normal hearing and those with different types of hearing impairment. **[10]**

b) Briefly describe the power spectrum model. **[5]**

OR

6) a) Discuss the role of informational masking in complex auditory environments, such as speech perception in noise. **[8]**

b) Discuss the mechanisms underlying co-modulation masking release. **[7]**

P.T.O.

IV. 7) Discuss the role of temporal resolution in auditory perception and how it affects the ability to perceive rapid changes in sound. **[10]**

OR

8) Explain the concept of the Temporal Modulation Transfer Function (TMTF) and its role in assessing auditory temporal processing. **[10]**

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31903 **MM-1959**

Sl. No. 0044 Total No. of Pages : 2

I Semester M.Sc.Examination, February - 2025

(Scheme : CBCS)

AUDIOLOGY

Physiological Assessment of the Auditory System

Time : 2 Hours **Max. Marks : 50**

Instruction : ***Answer all questions.***

I. 1) Explain the principle of admittence of immittence evaluation. **[15]**

OR

2) a) Justify the need for widebend reflectance for differential diagnosis of different middle ear pathology. **[10]**

b) Variables effecting multicomponent tympanometry. **[5]**

II. 3) a) Describe lpsi & contra lateral acoustic reflexes. **[5]**

b) Explain reflex pattern in right facial nerve palsy. **[5]**

OR

4) Discuss the importance of high frequency reflexometry in paediatric essessment. **[10]**

III. Write short notes on :

5) a) Factors affecting SOAE. **[5]**

b) Clinical application of SOAE **[5]**

OR

6) Explain the mechanism of reflection and distortion source of otoacoustic emissions. **[10]**

P.T.O.

IV. 7) a) With evidence from literature explain the different techniques used to record SFOAE's. **[10]**

b) Factor affecting TEOAE's. **[5]**

OR

8) a) Justify the statement Best DPOAE responses are obtained with stimulus parameters $L_1 > L_2$ & $F_2/F_1 = 1.2$. **[10]**

b) Clinical application of contralateral suppression of TEOAE's. **[5]**

31904 **MM-1960**

Sl.No. 0060 Total No. of Pages : 2

I Semester M.Sc. Examination, February - 2025

(Scheme : CBCS)

AUDIOLOGY

Auditory Physiology

Time : 2 Hours **Max. Marks : 50**

Instruction : ***Answer all questions.***

I. 1. Describe the anatomical structure of the middle ear and discuss its key function in the process of hearing? **[15]**

OR

2. a) Explain the protective mechanisms of the external ear and their importance in maintaining ear health. **[5]**

b) Explain the muscles associated with the pinna. **[5]**

c) Explain the resonance properties of the external ear and its application in hearing mechanism. **[5]**

II. 3. a) Describe the microstructure of inner and outer hair cells, highlighting the differences and specific functions. **[5]**

b) Explain the microanatomy of the cochlear duct and its role in maintaining the endocochlear potential. **[10]**

OR

4. a) Elaborate the blood supply of the inner ear. **[10]**

b) List out the similarities and differences between the ear anatomy of Mammals and Avians. **[5]**

P.T.O.

III. 5. a) Discuss the methods used to measure and quantify cochlear non-linearity. [5]

b) Describe the process of mechanotransduction in cochlear hair cells. [5]

OR

6. a) Describe the supply of Glucose and Oxygen to the cochlea and their importance in cochlear function. [5]

b) Explain the fundamental principles of the travelling wave theory and its advantages and limitation in understanding auditory perception. [5]

IV. 7. Discuss the microanatomy of the peripheral vestibular system. [10]

OR

8. Write a note on : -

a) Pathway involved in Vestibulo-ocular reflex. [5]

b) Discuss the various types of eye movements that contribute to maintain balance and stability during head and body movements. [5]

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