31901/31951

MB-2293

I Semester M.Sc. (AUD/SLP) Examination, May - 2023
(Scheme : CBCS)
Research Methods and Statistics in Speech - Language & Hearing

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

Instruction :   *Answer all questions.*

I.   1.   a)   Explain the methods of controlling extraneous variables in speech and hearing research.   **[5]**

      b)   Differentiate between quantitative and qualitative research.   **[5]**

<div align="center">OR</div>

   2.   Explain the importance of interview research in the field of speech & hearing. Discuss various types of interviews used.   **[10]**

II.   3.   a)   Compare and contrast single-subject designs and group designs. **[10]**

      b)   What are the factors affecting external validity of research?   **[5]**

<div align="center">OR</div>

   4.   Write short notes on :   **[3 × 5 = 15]**

      a)   Quari-experimental designs

      b)   Generalization of research findings

      c)   Internal validity of research.

III. 5.   a)   Write the general properties of normal distribution.   **[5]**

        b)   Construct regression equation of Y on X for the following data. **[10]**

X	2	3	4	5	6	7	8
Y	5	7	9	11	13	15	17

OR

     6.   a)   Write an essay on applications, types and assumptions of ANOVA.

                                                                 [10]

        b)   Differentiate between ANOVA and MANOVA.   **[5]**

IV. 7.   Explain various non-parametric tests applied for comparison between independent samples, with suitable examples from speech and hearing field.   **[10]**

OR

     8.   Test the association between Family History and Disorder in the following data.   **[10]**

Disorder	Family History	
	Positive	Negative
Present	100	70
Absent	20	50

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Sl. No. 0005   Total No. of Pages : 1

I Semester M.Sc. Examination, May - 2023
(Scheme : CBCS)
AUDIOLOGY
Auditory Perception

Time : 2 Hours   Max. Marks : 50

Instruction :   *Answer all questions.*

I.   1.   Discuss the effect of detectability Index and criteria point on the stimulus response matrix with appropriate figures.   **[15]**

<div align="center">OR</div>

    2.   Compare and contrast adaptive procedures and classical methods to obtain thresholds.   **[15]**

II.   3.   Critically evaluate the models of loudness perception.   **[10]**

<div align="center">OR</div>

    4.   Discuss the theories of loudness recruitment.   **[10]**

III.   5.   Discuss the procedures and limitations of notched noise method in estimating the shape of the auditory filter.   **[15]**

<div align="center">OR</div>

    6.   Write a note on informational masking and its significance.   **[15]**

IV.   7.   Discuss the factors that can affect the gap detection threshold in the sinusoidal acoustic stimulus.   **[10]**

<div align="center">OR</div>

    8.   Critically evaluate the models of temporal processing.   **[10]**

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Sl. No. 0008

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Total No. of Pages : 2

I Semester M.Sc. Examination, May - 2023
(Scheme : CBCS)
AUDIOLOGY
Physiological Assessment of the Auditory System

Time : 2 Hours

Max. Marks : 50

Instruction :   *Answer all questions.*

1. Describe in detail the Vanhuyse model and its application in assessment of middle ear disorders.   **[10]**

OR

2. a) What are the variables affecting tympanometry in infants?   **[5]**

    b) In brief, describe instrumentation of Immittance measurement.   **[5]**

3. a) Write in detail about the non-acoustic reflex pathway and its clinical applications.   **[10]**

    b) Write a note on Binqural summation of acoustic reflex.   **[5]**

OR

4. Explain Jerges box pattern and its clinical utility in differential diagnosis. **[15]**

5. Write about the principle and recording techniques of different types of OAE's.
                                                                                        [15]

OR

6. Write short notes on :

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

    b) Application of SOAE.   **[5]**

    c) Efferent mediated suppression of SOAE.   **[5]**

P.T.O.

7. Describe in brief :

    a)   Fine structure DPOAEs   **[5]**

    b)   Tinnitus and evoked OAEs   **[5]**

<div align="center">OR</div>

8. Write in detail about the clinical applications of TEOAE, DPOAE and SFOAE.

<div align="right">**[10]**</div>

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Sl. No.   0040

Total No. of Pages : 2

I Semester M.Sc. Examination, May - 2023
(Scheme : CBCS)
AUDIOLOGY
Auditory Physiology

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

Instruction :   *Answer all the questions.*

I.   1.   Explain the resonant properties of external ear and its implication to hearing. with supporting studies.   **[10]**

OR

2.   What are the different methods used in research to derive bone conduction of hearing? What are the significant findings and their implications to audiological testing?   **[10]**

II.   3.   Explain the significance of cochlear fluids in cochlear physiology. Explain the dynamics of cochlear fluids with the help of relevant models.   **[15]**

OR

4.   Write a note on :

a)   Current understanding of cochlear regeneration and their significance.
                                                                                                              [5]

b)   Structures of the ear are different in humans compared to animals.
                                                                                                              [5]

c)   Animal research and their significance.   **[5]**

III.   5.   Explain the process of mechano-electrical transduction in outer and inner hair cells.   **[15]**

OR

6.   What does active mechanism in cochlear refer to? Explain the possible underlying physiology with scientific evidences.   **[15]**

IV. 7. Describe the role of peripheral vestibular end organs in maintaining balance.

[10]

OR

8. Role of vestibulo-occular and vestibulo spinal reflex in vestibular tests.

[10]

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Sl. No. 0020

Total No. of Pages : 2

I Semester M.Sc. (AUD/SLP) Examination, May - 2023
(Scheme : CBCS)
Technology for Speech-Language and Hearing

Time : 2 Hours

Max. Marks : 50

Instruction : *Answer all questions.*

I. 1. a) What are the significant characteristics of a electric microphone? How does this microphone convert sound to electrical signal? **[5]**

   b) With supporting diagrams, illustrate how a moving coil loud speaker convents electrical signal to sound. **[5]**

OR

2. a) Differentiate low pass, high pass, band pass and band elimination filters on the basis of their frequency response curves.

   [5]

   b) Why do you regular uninterrupted power supply for diagnostic instruments? Explain how an uninterrupted power supply works. **[5]**

II. 3. a) Differentiate between an analog signal and a digital signal. Explain the different stages involved in conversion of analog signal to a digital signal? **[5]**

   b) Mention two methods used for decomposing a signal to simpler components in digital signal processing. Which of these methods is used for processing speech signals? Why? **[5]**

OR

4. a) State and explain the tasks performed by the hard disk in the functioning of a computer. **[5]**

   b) Explain the concept of world wide web. Illustrate with a diagram how a tele rehabilitation system can be implemented through, internet.

   [5]

P.T.O.

III. 5. a) Why is wide dynamic range compression required in hearing aid? Mention its side effects. [5]

b) How is noise cancellation in hearing aid through dual microphone? Explain. [5]

c) How do you estimate the short time energy of a speech signal? Illustrate with appropriate diagrams. [5]

OR

6. a) Compare LPC analysis technique with cepstrum analysis. Highlight the merits and demerits of both. [10]

b) With a schematic diagram explain the technology used for speaker recognition. [5]

IV. 7. a) Why do you requires an artificial ear and artificial mastoid to measure the output from a headphone and a leen vibrator respectively? Explain how they are setup for the measurement. [5]

b) Explain the technology with which an electroglottograph tracks the area of contact of vocal folds. [5]

c) Describe the principle of working of multichannel ERP system. [5]

OR

8. a) How is C-Arm different from a conventional x-ray machine. [5]

b) Explain the principle with which blood oxygen level dependent FMRI works. [5]

c) How does CAT scanner work? Briefly explain the advantages of CAT scanner over other scanning methods. [5]

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I Semester M.Sc. (AUD) Examination, May - 2023
(Scheme : CBCS)
AUDIOLOGY
Speech & Hearing
Diseases of the Ear and Auditory Pathway

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

Instruction :   *All the units are compulsory, Illustrate with diagram wherever ncessary.*

I. 1. Describe the anatomy of the Middle Ear Cleft with a neat labelled diagram and Explain the impedance matching mechanism of the Middle Ear. **[15]**

OR

2. Explain Central Auditory pathway write a note on Neuroplasticity.   **[15]**

II. 3. a) Describe the actiology, clinical features and management of secretory Otitis media. **[7]**

b) Describe the landmarks of tympanic membrane. **[3]**

OR

4. a) Describe the actiology, clinical features and management of chronic suppurative otitis media. **[7]**

b) What are the clinical features of LMN type of facial palsy? **[3]**

III. 5. a) What are Autosomal recursive disorders? Write a note on their manifestation. **[8]**

b) What are the clinical findings of tuning fork tests in a conductive pathology? **[2]**

OR

6. a) Describe the actiology clinical features and Management of Meniere's Disease. **[8]**

b) Write a note on Ototoxicity. **[2]**

P.T.O.

IV. 7. Write short notes on :   [3 × 5 = 15]

    a) Preauricular sinus

    b) Acoustic trauma

    c) Myringoplasty

<p align="center">OR</p>

  8. Write short notes on :   [3 × 5 = 15]

    a) Perichondritis of External Ear

    b) Noise induced hearing loss

    c) Stapedotomy

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