

MSCSH/AA 010/LA 010

I M.Sc. (I Sem.) Examination, December 2003 Speech and Hearing Research Methods in Speech-Language and Hearing Audiology/Speech-Language Pathology (Common Paper)

Time: 3 Hours

Max. Marks: 80

Instruction: Answer all questions.

- I. 1. a) Describe normative research and experimental research with examples. 10
1. b) Discuss any two levels of measurements. 6
2. a) Describe client assisted and covert measurements. 8
2. b) Discuss the role of evaluation research with examples. 8
- II. 3. a) Discuss different types of time-series designs with examples in audiology. 10
3. b) Differentiate longitudinal and cross-sectional designs. 6

OR

4. a) Discuss the organization and format of writing an experimental research. 8
4. b) Explain Solomon 4-group research design with suitable example. 8
5. a) List 20 journals in which articles on speech and hearing occur. 10
5. b) Critically evaluate the methods used in fluency research. 6

OR

6. a) Discuss the methods unique to research on prosody. 8
6. b) Discuss implications of research in speech pathology between 1990-2000. 8
- IV. 7. a) How did our understanding of stuttering changed between 1930's and 1990's ? 8
7. b) Elaborate how the advent of , DSP technology has changed audiological practice since 1980. 8

OR

8. a) Critically evaluate any two studies on learning disability. 8
8. b) Discuss research methods used in language pathology in the period of 2nd world war. 8
- V. 9. a) What are the methods of research used in acoustics ? 10
9. b) Discuss methods adopted to derive epidemiological data on hearing loss, 6
- OR
10. a) Absence of epidemiological section on hearing loss in India has seriously hampered in the planning of programs for hearing impaired children. Discuss. 8
10. b) "Sensitivity and specificity are the hallmarks of empirical based assessment tools". Discuss. 8
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M.Sc. (SLR)/M.Sc. (Aud.) I Semester Examination, December 2003
(Integrated Semester Scheme)
Audiology/Speech, Language Pathology (Common Paper)
Speech and Hearing
Statistics in Speech - Language and Hearing

Time: 3 Hours

Max. Marks: 80

Instruction: All questions are compulsory.

- I. 1) a) Explain the measures of central tendency and variability and their features. 10
b) Describe the terms 'hypothesis¹' and 'hypothesis testing'. 6

OR

- 2) a) Describe the various methods of correlation. Differentiate between correlation and regression. 8
b) Apply X^2 (chi-square) test for the data given below and comment on its significance assuming equiprobability principle. S;

Responses	Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
Frequency	15	12	6	17	70

- II. 3) a) Explain one-way and two-way analysis of variance and their applicability. 6
b) Calculate 'F' value for the data given below and interpret the obtained F value. 10

Performance

Group A	10	12	13	14	14
Group B	9	11	12	14	15
Group C	14	14	12	16	11

OR

- 4) a) What are 'post-hoc tests'? Explain any two types of post-hoc tests. 8
b) Explain the basic assumptions underlying repeated measure ANOVA with suitable examples. 8

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III. 5) a) Explain the use of non-parametric tests in speech-language and hearing with suitable examples. 8

b) Apply Man-Whitney U test for the data given below and indicate whether the difference between A & B is significant. 8

A	10	44	60	71	11	.42	70	14	12	17
B	32	60	72	92	51	64	81	50	41	54

OR

6) a) Describe various reasons causing non-normal distributions and their consequences. 8

b) Explain the theorem pertaining to 'central limit'. 8

IV. 7) a) What are contingency tables? Calculate contingency co-efficient for the data given below and comment on its significance. 10

Sex/Response	Agree	Disagree
Boys	10	50
Girls	40	20

b) Write short notes on: 6

a) Kappa co-efficient and .

b) log linear models.

OR

8) a) What are the different methods of measuring association? Explain their applicability. 8

b) Differentiate between qualitative and quantitative data and various methods to analyse them. 8

V. 9) a) What do you mean by 'path analysis'? Explain briefly the steps involved in path analysis. 12

b) Write notes on discriminant function analysis. 4

OR

10) a) Explain the various steps involved in principal component analysis. 10

b) Differentiate between MANOVA and MANCOVA. 6

MSCSH/AA 030/LA 030

M.Sc. I Sem. Examination, December 2003
Audiology/Speech Language Pathology (Common Paper)
Technology for Speech-Language and Hearing

Time : 3 Hours

Max. Marks : 80

Instruction: Answer *all* questions.

- I. 1. a) What is an operating system ? How is it different from an application software ? Describe with a neat diagram, the requirements for digital signal processing in a computer. 8
- b) What is a truth table ? What is an OR gate and an AND gate ? Why are they so called? Construct the truth table for an OR gate and an AND gate. 8

OR

2. a) What is noise ? What is white noise ? Discuss the different types of noise seen in an amplifier output. 6
- b) What is a flip-flop circuit ? Give a few examples for bistable devices. Explain with a neat diagram, how do you construct a JK flipflop for purposes of counting. 10
- II. 3. a) What is the importance of digital signal processing? Explain, with neat diagrams, an A/D, and D/A circuit. What is the role of filters in A/D and D/A conversion? 10
- b) What is AM and FM transmission ? How are FM and AM receivers different? What is the usefulness of FM transmission and reception for a hearing therapist ? 6

OR

4. a) Describe different digital modulation techniques and their application in speech analysis. 12
- b) Describe the terms filtering, sampling and quantization with reference to digital signal processing.
- III. 5. a) Describe with a neat block diagram, the parameters, assessed in evaluating a hearing aid. 10
- b) Write a note on BIS for body-work hearing aids. 6

OR

6. a) Describe the functioning of a true digital hearing aid with the help of a neat diagram.
- b) Describe how a speech scientist can be helpful to a communication engineer in designing a speaker recognition system. 6

P.T.O.

- IV. 7. a) Describe the characteristics, with illustration, of sinusoidal stimuli used to elicit auditory evoked potentials. 9
- b) Describe the terms differential amplification, CMMR, artifact rejection, filtering and signal averaging with reference to an ABR systems. 7
- OR
8. a) Describe how do you make sure that the temporal characteristics of click and tonebursts are on you intended them to be for presentation. 12
- b) Write a brief note on electrodes used in ABR recording. 4
- V. 9. a) How relevant is, telerehabilitation in speech and hearing field ? What areas of audiology practice can be augmented by telerehabilitation ? 10
- b) Write an essay on tools for genetic analysis that are of importance to a speech-hearing professional. 6
- OR
10. a) What is the relevance of fMRI for a speech-language pathologist ? Describe the principles of a CT scan and MRI scan. 10
- b) Describe the rationale of cortical blood flow technique. What is its relevance to a language pathologist ? 6
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