

**First Semester M.Sc. (Aud.) / M.Sc. (SLP) Degree Examination, January 2009
(Semester Scheme)**

**Audiology and Speech Language Pathology
Research Methods in Speech Language and Hearing**

Time : 3 Hours

Max. Marks : 80

Instruction : Answer all questions. All questions carry equal marks.

1. a) Define science. Bring out the salient objectives and characteristics of behavioral sciences. 8
- b) Attempt a short essay on various methods of science as applied to the field of speech and hearing. 8

OR

- c) Classify the various types of research in the field of communication disorders. Expand on any two types of research with suitable illustrations. 8
- d) Write short notes on : (2x4=8)
- i) Ex-post Facto Research ii) Survey Research
2. a) Compare and contrast single subject and group designs as applied to the field of speech and hearing. 8
- b) Bring out the legal, ethical and cultural considerations for research in the field of speech and hearing. 8

OR

- c) Delineate the meaning and importance of documentation and record keeping in research. 8
- d) Write short notes on : (2x4=8)
- i) Longitudinal versus Cross Sectional Research
- ii) Randomization and Matching.

3. a) Elaborate on the various models of research practiced throughout the history of speech and hearing. 16

OR

b) Outline a historical sketch of research in the field of speech and hearing. 16

4. a) Attempt an essay on contemporary trends in speech and hearing research. 16

OR

b) Visualize an agenda for future research in the field of speech and hearing relevant to our country. 16

5. a) Draw lessons from the area of research in linguistics and neurology that has relevance to the field of speech and hearing. 8

b) Define epidemiology. Discuss its scope and relevance to the field of speech and hearing. 8

OR

c) Write short notes on any **four** of the following : (4x4=16)

i) Prevalence and Incidence

V ii) Genetic Methods

iii) Ecological validity

iv) Floor and Ceiling Effects

v) Limits of Normative Research

I Semester M.Sc. (Aud.) & M.Sc. (SLP) Examination, January 2009
Audiology and Speech Language Pathology
Statistics in Speech Language and Hearing

Time : 3 Hours

Max, Marks : 80

Instruction : Answer all questions.

1. a) Bring out the meaning and significance of measures of central tendency and dispersion in statistics as applied to the field of speech and hearing research. 8
- b) Write short notes on :
i) Point and Interval Estimation ii) Theoretical Distributions (4x2=8)
- OR
- c) Define probability. Explain addition and multiplication rule of probability with suitable examples. 8
- d) The following table gives distribution of 150 cases of mental retardation seen in a CGC with reportedly five different causes :

Sex/Causes	Cause A	Cause B	Cause C	Cause D	Cause E
Males	18	23	41	17	27
Females	32	17	19	23	13

8

Apply a chi square test to verify whether any statistically significant differences exist for the above mentioned data.

2. a) Differentiate between correlation and regression. 8
- b) The following table gives details of two series of data :

X	104	110	112	114	120
Y	106	116	140	175	173

8

Find the correlation between x and y. Interpret the result. Find the regression equation of x on y. Estimate y when x is 125.

OR

P.T.O.

- c) **Write** short notes on : (2x4=8)
 i) Treatment effects and fixed effects in ANOVA
 ii) Assumptions underlying ANOVA.

- d) Calculate F ratio for the following data 8

Placebo	38	47	39	25	42
Low Dose	22	19	8	23	31
High Dose	14	26	11	18	5

3. a) Mention the differences between parametric and non parametric tests. 8
 b) Apply Man-Whitney Test on the following data : 8

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

- c) Write short notes on : (3x4=12)
 i) Wilcoxon two Sample Test
 ii) Runs Test
 iii) Central Limit Theorem.

- d) Explain Spearman R, Kendall Tau and Gamma Coefficients as examples of non-parametric correlation coefficients. 4

4. a) Explain the significance of Kappa statistics to assess rater agreements. 8
 b) Calculate the coefficient of association between the type of college training and success in teaching from the following data: 8

Institution	Successful	Unsuccessful	Total
Government	58	42	100
Private	49	51	100
Total	107	93	200

OR

c) Calculate the coefficient of contingency between the two variables in the following table:

		General Ability		
		Good	Fair	Poor
Math Ability	Good	44	22	4
	Fair	265	257	178
	Poor	41	91	98

8

d) Write short notes on :

i) Log Linear Models ii) Content Analysis (2x4=8)

5. a) Attempt an essay on the importance and applications of multivariate statistics in the field of speech and hearing. 16

OR

b) Write short notes on :

i) Multidimensional Scaling ii) Discriminant Analysis (2x8=16)

MSCAD/AA 030/MSCSP/LA 030

I Semester M.Sc. (Aud.) M.Sc. (Sip.) Examination, January 2009
Audioiogy/Speech Language Pathology
Technology for Speech, Language and Hearing

Time : 3 Hours

Max. Marks : 80

I. 1) What are: **(4x4=16)**

- a) Operating systems ?
- b) Flow charts ?
- c) Peripheral drives ?
- d) ASCII Codes ?

OR

- 2. a) Write the need of application of software in the area of Speech and Hearing. 8
- b) Describe two application softwares in the field of Audiology. 8

- II. 3) a) Write a note on converting analog signals into digital signals. 8
- b) What are the advantages of converting analog signals to digital signals ? 8

OR

- 4) "Satellite communication has considerable use in the field of Speech and Hearing".
Discuss. Also explain the different types of Digital Modulation techniques, 16

- III. 5) How are analog hearing aids different from programmable hearing aids and digital hearing aids ? 16

OR

- 6) Name and describe the standards for hearing aids that are used in India. 16

P.T.O.

MSCAD/AA 030/MSCSP/LA 030

IV. 7) Describe the different aspects of signal averaging in a ABR equipment. 16

OR

8) Write notes on signal acquisition from electrodes, artifact rejection and filtering. 16

V. 9) a) Describe the equipment required for tele-rehabilitation. Explain with block diagram. 8

b) Describe how tele-rehabilitation can be used in training children with hearing impairment. 8

OR

10) a) What are the principles of CAT scanner and MRI scanner. 8

b) Describe their utility in the field of Speech and Hearing. 8

MSC SP/LA 040

I Semester M.Sc. (SLP) Examination, January 2009
(Integrated Semester Scheme)
Speech-Language Pathology
Neurobiology of Speech and Language

Time : 3 Hours

Max. Marks : 80

Instruction : Answer all questions.

- I. 1) a) With a neat diagram, explain the centers and circuits of neural control of language including cerebral cortex, basal nuclei, thalamus and cerebellum, 8
b) Describe the functions (sensory/motor/mixed) of V, VII, X and XII cranial nerves giving their origins. 8

OR

- 2) a) Critically evaluate any two theories of language representation in the brain. 8
b) Briefly explain the following: 8
- Aphasia with subcortical lesions
- Hemispheric lateralization.

- II. 3) a) What is the role of attention in language acquisition ? Discuss its implications for language disorders. 8
b) Describe the site of lesion and type of memory loss in any four disorders related to language impairment in adults. 8

OR

- 4) a) Elaborate on temporal lobe and memory processing function. 8
b) Write brief notes on : 8
- Executive functions
- Baddeley's model
- Attention in learning disability
- William's syndrome

P.T.O.

MSC SP/LA 040

III 5) Describe the principles of any two non-invasive neuro-imaging techniques. Indicate their application in neuroscience research as related to language pathology 16

UK

6) Discuss the usefulness and suitability of invasive techniques in neurolinguistic research. Elaborate on the Wada technique, with a suitable example of client with language disorder. 16

IV. 7) Describe the role of the neurotransmitters, Acetylcholine and Dopamine in the mediation of speech and language. Explain the terms : Reuptake, Chemical conduction, Refractory period and regeneration. 16

OR

8) Describe any two disorders of speech and language related to Neurotransmitter dysfunction. 16

V. 9) Elaborate on language comprehension and memory skills in healthy elderly. Describe the physiological measures in aging. Give a note on reaction time studies. 16

OR

10) a) Explain the morphological and neurochemical changes seen in central nervous system with increasing age. 8

b) Explain in brief: 8

- Memory in children
- Attention and aging
- Language in Alzheimer's disease
- Aging and laryngeal system.

MSC SP/ LA 050

I Semester M.Sc. (SLP) Examination, January 2009

(Scheme : ISS)

Speech - Language Pathology

Clinical Linguistics and Multilingual Issues in Communication

Time : 3 Hours

Max. Marks : 80

Instruction : Answer all the questions.

- I. 1) Describe the scope of clinical linguistics in pathological/disordered speech. 16
OR
2) Explain the clinical relevance of principles of general linguistics. - 16
- II. 3) What is phonemic analysis ? Explain the principles of phonemic analysis. 16
OR
4) Describe the process of phonological acquisition in children with suitable examples. 16
- III. 5) a) What is semantics ? Write a note on semantic fields. 8
b) Explain with suitable examples the lexical semantic relations of synonymy, antonymy and hyponymy. 8
OR
6) a) What is a pragmatics ? Explain pragmatic development in children. 8
b) Illustrate a case study with semantic pragmatic disability. 8
- IV. 7) What is sociolinguistics ? Explain the various aspects of study in socio-linguistics. 16
OR
8) 'Knowledge of socio-linguistics is essential for SLP'. Comment. 16
- V. 9) a) Elucidate the relationship between language, culture and religion. 8
b) What is linguistic relativity ? Explain. 8
OR
10) a) What are the cultural issues in verbal and nonverbal communication ? Discuss. 8
b) Discuss the concept of linguistic determinism. 8