AA/LA010

I Semester M.Sc. **Examination, December** 2006
(Semester Scheme)
Speech Language **Pathology and Audiology**
Research Methods in Speech Language and Hearing

Time : 3 Hours Max. Marks : 80

Instructions : 1) Answer all questions following instructions given.
2) See the marks given for each question.

I. 1) a) What do you understand by research ? Bring out the variables in speech and Hearing research. 8

b) Discuss the normative research in speech language pathology and Audiology with suitable illustrations. 8

OR

2) What are the various methods of observation and measurement in speech language pathology and audiology ?. 16

II. 3) What are the characteristics of a good research design? Illustrate with examples the single subject multiple baseline design. 16

OR

4) Write the format and principles involved in communicating research findings in the field of speech language pathology and audiology ? 16

III. 5) Critically evaluate any two studies in the treatment of stuttering that have used ABA & ABAB design. 16

OR

6) Evaluate any two studies appeared in the standard journals in the field of Audiology that used Factorial Rondomized Blocks Design. 16

IV. 7) a) Heighlight recent trends in research in the treatment of phonological disorders. 8

b) Critically analyse the major research contributions in understanding hearing disability in the past one decade.. 8

OR P.T.O.

8) a) Discuss the major advancements in research methodology in hearing evaluation in the last 10 years. 8

D b) Discuss research methods used in auditory training between 1980 - 2000. 8

V. 9) Write an essay on various research methods used in clinical psychology in the treatment of stuttering. 16

OR

10) Describe the epidemiological research studies in Audio logy. 16

AA/LA020

I Semester M.Sc. (SLP)/M.Sc. (Aud.) Examination, December 2006
(Common Paper) (Integrated Semester System)
Speech and Hearing
Statistics in Speech - Language and Hearing

Time : 3 Hours Max. Marks : 80

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

I. 1) a) Define probability. Explain the various approaches to the study of probability. 8

b) A puzzle is given to five students A, B, C, D and E. Their chance of solving it are 1/2, 1/3, 1/4, 1/5 and 1/6. What is the probability that the problem will be solved ? 4

c) Explain the meaning and applications of Bayes'theorem. 4

OR

2) a) Distinguish between point and interval estimation 6

b) Elaborate on the properties of normal distribution. 6

c) Distinguish between null hypothesis and alternative hypothesis with suitable examples.

II. 3) a) Differentiate between ANOVA and ANCOVA. 6

b) A school adopts 3 types of teaching methods on 4 separate groups of children with special needs. The scores secured after the teaching program are: 10

.

Methods/Students	A	B	C	D	Total
x	6	4	8	6	24
Y	7	6	6	9	28
Z	8	5	10	9	32
Total	21	15	24	24	84

Find out if the methods are different as also if they make any material difference in the final score.

OR

P.T.O.

4) a) Elucidate the general properties of normal distribution curves. 4

b) State and explain the addition theorem of probability with suitable examples. 4

c) Find the coefficient of correlation between X and Y series : 8

X	57	42	40	33	42	45	42	44	40	56	46	43
Y	10	60	30	41	29	27	27	19	18	19	31	29

III. 5) a) State and explain the central limit theorem. 6

b) Do the results of a survey given below suggest that the type of family has a bearing on the condition of a child by using chi-square test: 10

Condition of Child	Nuclear Family	Non Nuclear Family	Total
Introvert	76	43	119
Ambivert	38	17	55
Extrovert	25		72
Total	139	107	246

ORt

6. a) Write notes on the various types of non-normal distributions. 6

b) In a survey of 200 obstetric cases, the following data was compiled

Type of Labor	Average IQ	Sub-Average IQ	Total
Normal Labor	40	40	80
Difficult Labor	35	85	120
Total	75	125	**200**

Do these figures support the hypothesis that type of labor is linked with the IQ of the children. X^2 for 1 df at 5% is 3.84. 10

IV. 7) a) Explain the utility of various measures of association in the analysis of qualitative data ? *6*

b) In two Child Guidance Centers -A and B, the following information was gathered by an investigator:

	CGC 'A'	CGC 'B'
Total population	240	234
MR cases	40	34
Non-MR cases with Problem Behaviors	40	20
MR cases with Problem Behavior	5	2

Compare the degree of association between mental retardation and problem behaviors in each of the two CGCs. **10**

OR

8) a) Write short notes on **any two** of the following : (4X2=8)

i) Coefficient of Association

ii) Consistency of Data

iii) Contingency Tables.

b) From the following two cases find out whether the data are consistent or not: 8

Case 1 : (A) = 100, (B) = 150, (AB) = 60, N = 500

Case 2 : (A) = 100, (B) = 150, (AB) = 140, N = 500

V. 9) a) Explain the salient features and applications of principal component analysis with suitable examples. 8

b) Write short notes on any **two** of the following : (4x2)

i) Factor analysis ii) Multiple Regression iii) MANCOVA

OR

10) a) What is multivariate analysis ? Explain their salient features and applications in the field of speech and hearing. S

b) Write short notes on **any two** of the following : **(4x2)**

i) Cluster Analysis

ii) Logistic Regression

iii) Mathematical Statistics Vs Biostatistics.

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I Semester M.Sc. Examination, December 2006
(Semester Scheme)
MSc. (Aud.) and MSc. (SLP)
Technology for Speech-Language and Hearing

Time : 3 Hours Max. Marks : 80

Instruction : Answer all questions.

1. a) With a functional block diagram, explain how will you do the networking of a speech therapist's computer with the computer of a child with a communication disorder ? 6

   b) List out a few application softwares used for diagnosis of communication disorders. How does an application software differ from a computer language ? explain. 6

   c) "In a personal computer, RAMs are preferred over hard disks for storage of current data". Justify this statement. 4

OR

2. a) Illustrate the use of an LCD display in an immittance audiometer. Explain the working of an LCD display. 5

   b) With supporting diagrams explain the structure and working of the following devices (a) UJT (b) Transistor. List out two applications for each of these devices related to the field of speech and hearing. 5

   c) Explain how flip-flops are used to store bits. 5

3. a) Mention the applications of digital filters in speech analysis. Which type of digital filter is preferred for speech analysis ? Why ? 5

   b) Mention how a D to A converter is used in a digital hearing aid. Explain the working of a D to A converter. 6,

   c) Find out the ideal sampling frequency for A to D conversion of a typical speech signal. Justify your answer with supporting theorems. *5*

OR

. P.T.O. .

4. a) With a block schematic, explain how an audio signal can be modulated and demodulated in amplitude. 8

   b) Name the different types of digital modulation techniques. Explain any one technique in detail. Mention how this technique can be used in speech analysis. 8

5. a) With a neat sketch, explain the temporal and spectral nature of a click stimuli before and after transduction. 6

   b) Define the following with reference to acoustic stimuli. 6

      a) Stimulus duration b) Stimulus level

      c) Stimulus frequency d) Stimulus repetition rate

   c) "The spectrum of a tone burst stimulus before transduction depends on the gating function". Critically evaluate this statement. 4

OR

6. a) What are the factors to be considered while placing electrodes on the patient to perform an evoked response audiometry ? 4

   b) What is differential amplification ? How does it help in eliminating common mode noise ? 6

   c) What is artefact rejection ? How is it implemented in a BERA system ? 6

7. a) With a block diagram, explain the working of a voice response system. 8

   b) Name the different types of speaker verification systems. Explain each of them. 8

OR

8. a) Briefly explain the need for carrying out electroacoustic evaluation of hearing aids. 4

   b) With a block diagram, explain how a hearing aid evaluation system works. 8

c) Define the following terms with reference to.a hearing aid 4

i) Attack time

ii) Release time

iii) Compression threshold

iv) Compression ratio.

9. a) Name the different imaging techniques used in radio diagnosis. Comment on the merits and demerits of each. 5

b) Explain how Doppler shift principle is used for blood flow studies. 5

c) List out the problems faced in genetic analysis of speech and language disorders. Explain the multifactorial polygenic model. *6*

10. a) With a functional block diagram, explain how an EEG signal is recorded. 6

b) Explain the working principle of Magnetic Resonance Imaging. 6

c) Write a short note on Elector Myo Graph. 4

LA 040

I Semester M.Sc. Examination, December 2008
(Semester Scheme)
Audioiogy & Speech-Language Pathology
Neurobiology of Speech and Language

Time : 3 Hours Max. Marks : 80

Instruction : Answer aU questions.

I . 1. a) What are the clinical findings associated with unilateral and bilateral lesions of cranial nerves related to speech functions. 10

b) How can training in neuro-science make you a better clinician and researcher in the field of speech language pathology. . 6

2. a) Discuss the clinical implications of sensory and motor pathology in medulla oblongata. 10

b) Explain the type of LMN lesion which affect isolated muscles. 6

II. 3. a) Explain the Atkinson and Shiffrin model of human memory. 10

b) Describe the features of declarative and non-declarative memory. 6

4. a) What is the role of short term and long term memory in language acquisition. 10

b) List the different types of attention defects seen in children with ADD/ADHD. 6

III. 5. a) "Advancement in Neuroirnaging techniques have facilitated understanding of neurological conditions associated with speech and language disorders"-

b) Discuss the role of fMRI in neurolinguistic research. ***6***

OR

6. a) Elaborate on any two metabolic techniques that are used to study brain physiology. 10

b) Explain the role of evoked response potentials in the diagnosis of learning disability. 6

P.T.O.

IV. 7. a) Describe the chemical and electrical events that are related to neural Impulse transmission beginning with resting potential and ending in the generation of action potential. 10

b) Explain how 'neuronal sprouting' and 'neuronal unmasking' are related to regeneration of CNS. 6

OR

8. a) Describe the functions of neurotransmitters and highlight the role of neurotransmitters in the genesis of Parkinson's and Huntington's disease. 10

b) Explain the electrical correlates of synaptic functions. 6

V. 9. a) How does aging influence semantic functions in an individual ? 8

b) What are the various pathophysiological changes seen in articulatory functions due to aging. 8

OR

10. a) Describe the effect of aging on brain structures. 8

b) Highlight the factors which a speech language pathologist should be aware of during assessment of speech language function of aged individuals. 8

LA 050

I Semester **M.Sc. Examination, December. 2006**
(Semester Scheme)
Audiology and Speech Language Pathology
Clinical Linguistics and Multilingual Issues in Communication

Time : 3 Hours Max. Marks : 80

Instructions : 1) Answer all questions.
2) All questions carry 16 marks.

1. a) Define clinical linguistics. **(2+14=16)**

   b) Present your views on the extended scope of clinical linguistics in the Indian context.

OR

2. "Clinical linguistics is not an offshoot of general linguistics". Discuss the above statement with reference to your clinical experience. **16**

UNIT-II

3. a) Differentiate between segmental and non-segmental phonology. **(4+12=16)**

   b) Justify the relevance of studies on segmental and non-segmental phonology for Speech-Language Pathology.

OR

4. a) Explain with suitable examples the different syntactic structures. (8+8=16)

   b) Highlight the role of morphology in syntactic structures.

UNIT-III

5. a) What is semantics ? Explain the components of semantics with examples. **(8+8=16)**

   b) Discuss any one condition with semantic disability.

OR

P.T.O.

6. "Semantic-pragmatic disorders are a challenge to a Speech-Language Pathologist", Discuss from the perspective of clinical linguistic issues. 16

. UNIT - I V

7. a) What is sociolinguistics ? Discuss the factors that influence sociolinguistics. (8+8=16)

b) Justify the relevance of socio linguistics with communication disorders

OR

8. Differentiate between language and dialect with suitable examples. State its implications for the study of Speech-Language Pathology. 16

UNIT - V -

9. 'Cultural diversity in India is a boon to the growth of Speech-Language Pathology", Justify the statement. 16

OR

10. Non-verbal communication approach is a solution to the problems posed by multilingual situation in this country. Justify vour answer. 16
