AA 01O/LA010

I Semester M.Sc. Examination, December 2007
(Semester Scheme)
Audiology and Speech Language Pathology
Research Methods in Speech Language and Hearing

Time : 3 Hours Max. Marks : 80

Instruction : Answer all questions.

1. a) Highlight the salient features of various research methods used in the field of speech and hearing. 8

   b) Write short notes on : (4x2=8)

   i) Evaluation Research ii) Observation Methods.

   OR

   c) Evaluate the significance ex-post facto research in the field of speech and hearing with suitable examples. 8

   d) Explain the meaning and applications or normative research. 8

2. a) Differentiate between single subject and group designs. 8

   b) Bring out the importance of ethical issues in research. 8

   OR

   c) Explain the various types and importance of quasi experimental designs. 8

   d) What are the major differences between ABA withdrawal and reversal designs ? 8

3. a) Attempt a critical review of research studies carried out in the field of speech and hearing over the past few decades. 16

   b) What is a research model ? Explain their relevance with suitable examples to expand research in the area of speech and hearing. 16

P.T.O.

4. a) Attempt a historical sketch on various research methods in the field of speech and hearing. 16

OR

b) Suggest an agenda for future research based on past achievements in the field of speech and hearing. 16

5. a) Define epidemiology. Highlight the various measurements used in the field of epidemiology. 8

b) Write short notes on : (4x2=8)

i) Genetic Methods

ii) Clinical Trials

OR

c) Write short notes on : (4x2=8)

i) Cohort Studies

ii) Point Prevalence.

d) Highlight the various scientific methods used in allied disciplines whicn nave a bearing on the field of speech and hearing. 8

AA020/LA020;

I Semester M.Sc. Examination, December 2007
(Semester Scheme)
Audiology/Speech-Language Pathology
Statistics in Speech-Language and Hearing

Time : 3 Hours Max. Marks : 80

Instruction *: Answer* ***all*** *questions. (AU Units are compulsory.)*

I. I) a) Mention the important measures of central tendency and discuss them in detail. 10

b) Mention the important properties of probability. 6

OR

2) a) Discuss the role of statistics in speech-language pathology and audiology with specific examples. 10

b) Differentiate between point estimation and interval estimation with suitable examples. 6

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

b) The distribution of achievement scores of subject treated by the three methods of instructions are given below. Apply ANOVA to find whether the methods differ significantly. 10

LECTURE	8	10	11	11	12
SEMINAR	11	13	13	15	16
DISCUSSION	5	5	8	9	10

4) a) From the following data find whether BCG is a preventive measure against tuberculosis: 10

	Attacked	Not Attacked
Inoculated	30	70
Not Inoculated	180	120

b) Explain the terms : 4

i) Tests for additivity

ii) Tests for homogeneity

iii) Repeated measures. 6

P.T.O.

III, 5) a) Write briefly on sign test and median test. 6

b) Find whether the two groups differ significantly by applying •MANN-WHITENY 'IT test to the following data : 10

Boys	25	24	23	22	10	10	14	10	2	2	4	9
Girls	8	9	26_15_		21	30	30	29	31	32	35	34

OR

6) a) Describe non-normal distributions and central limit theorem. 6

b) Describe the salient features of non-parametric statistics. 10

IV7) a) Describe different types of log-linear models. 6

b) Calculate "Kappa Coefficient" for the following data and interpret the result: 10

	Positive	Negative
Positive	4	4
Negative	7	4

Or

8) a) Discuss various measures of association. *6*

b) Find Karl Pearson's coefficient of contingency for the following data and interpret the result: 10

Response	Male	Female
Yes	75	30
No	25	70

V . 9) a) Explain the need for multivariate analysis in analysing research problems, 10

b) Write a note on MANOVA. *6*

OR

10) a) Define partial and multiple correlation co-efficients with suitable examples. 10

b) Write a note on path analysis. 6

AA 030/LA 030 .

I Semester M.Sc. **Examination, December 2007**
(Semester Scheme)
M.Sc. (Audiology) and M.Sc. (Speech Lang. Pathology)
Technology for Speech-Language and Hearing

Time : 3 Hours Max. Marks : 80

Instruction ; Answer allquestions.

1a) Explain the role of a DC powersupply in an audiometer. List out the specifications of an ideal DC power supply.- 6

b) Why do you require an a-c voltage stabilizer? With a block diagram, explain its working. 6

c) Mention any one application of a digital counter in speech and hearing instrumentation. Explain how a digital counter works. 4

OR

2. a) How does a computer language differs from an operating system ? 4

b) Explain how the internet works. 6

c) Which type of memory device is used for storing the operating system in a computer ? Why ? Explain how data is stored in this memory device . *6*

3. a) Which type of modulation technique is used in an FM hearing aid system ? Explain how the audio signal is modulated and demodulated using this technique. 6

b) With a block diagram, explain how will you implement telerehabilitation using satellite communication. 4

c) Explain the technique of Pulse Code Modulation. Illustrate how it is used for speech coding ? 6

OR

4. a) Explain the role of an A to D converter in a digital hearing aid. 4

b) Discuss the advantages of FIR filters over IIR filters. Explain how these filters are implemented, *6*

c) On what basis the number of quantisation levels are decided in analog to digital conversion ? Explain the process of quantisation and coding. 6

P.T.O.

5. a) How is a tone pip stimulus generated ? What are the major differences between a tone pip and tone burst stimulus ? 6

b) Explain the mechanism of generation of evoked potentials in response to acoustic stimuli. 6

c) Distinguish between a condensation click and a rarefaction click. 4

6. a) Explain, how does signal averaging help to enhance signal to noise ratio. 8

b) "Conventional amplifiers are not preferable for amplification of an evoked response signal". Critically evaluate this statement. 4

c) What are the different types of noises associated with an evoked response signal? 4

7. a) Explain the two different methods used for compensating non-linearity in the loudspeaker's frequency response while doing electroacoustic testing of hearing aids. 6

b). What are the different types of speech recognition systems? Explain the working of any one of them with a block diagram. 6

c) List out the different types of time domain analysis techniques for speech analysis. Comment on the limitations of each of them. 4

OR

8. a) Explain the following techniques used for non linear amplification'

(i) BILL (ii) TILL. 8

b) Differentiate between input compression and output compression. 4

c) With a block diagram, explain the technology of a digitally programmable hearing aid. . . 4

9. a) Explain with a block diagram the technology of a CT scanner. 6

b) Define the following:

i) Genotype ii) Etiology iii) Gene iv) Genome. 4

c) Explain the single major locus model for genetic analysis. 6

OR

10. a) Discuss the advantages of MRI over X-ray imaging in the diagnosis of communication disorders. 5

b) With a block diagram, explain the technology involved in an EEG machine. 6

c) What is Doppler Shift ? How is it applied in the measurement of cortical blood flow? 5

LA 040

ISemesterM.Sc. (Speech-Language Pathology) Examination, December 2007

(Semester Scheme)

Speech-Language Pathology

Neurobiology of Speech and Language

Time: 3 Hours Max. Marks: 80

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

I, 1) a) Describe the origin, divisions and functions of cranial nerves related to speech production, 8

b) Describe the mechanisms of subcortical control in language production. 8

2) a) Describe, in detail, cranial nerve examination of speech organs. 8

b) Elaborate on the concept of cerebral dominance and plasticity and its implication for childhood language acquisition. 8

II. 3) a) What is memory trace ? Describe inter hemispheric transfer of memoi) **trace.** **8**

b) Describe reticular control of attention. 8

4) a) Describe the neural mechanism of memory,

b) What is the significance of multisensory inputs for memory ? Justify with a suitable model. 8

III. 5) a) What are ERPs and describe their importance in language research. 8

b) Compare and contrast invasive and non-invasive neurological investigations. 8

OR

P.T.O

6) a) Describe MMN, CNV and discuss their use in language research. **8**

b) Describe the principle of FMRI and its application in speech and hearing research. 8

IV. 7) a) What is the role of neurotransmitters in the mediation of speech and language? 4

b) Describe the basic physiology of neurotransmitter system. 12

OR

8) Describe the role of neurotransmitters in speech and language dysfunction with suitable illustration. 16

V. 9) a) What is aging ? 4

b) Describe the physiology of aging in relation to nervous system. What are the implications for speech and language functions ? 12

OR

10) a) Elaborate the effects of aging on learning, memory and reasoning. 8

b) Describe the effects of aging on pragmatic communicative aspects. 8

LA 050

I Semester M.Sc. Examination, December 2007
(Semester Scheme)
Speech Language Pathology
Clinical Linguistics and Multilingual Issues in Communication

Time : 3 Hours Max. Marks : 80

Instructions : Answer all the questions. All questions carry 16 marks.

Unit I. 1) "Application of clinical language data to linguistic ends is clinical linguistics", Present and Justify your views on the above statement. 16

OR

2) a) Define linguistics and clinical linguistics.

b) Elaborate on the principles of linguistics that are most relevant for clinical purpose in speech language pathology. (4+12=16)

Unit II. 3) What is phonology ? Describe the process of acquisition of phonology with special reference to distinctive features. 16

OR

4) a) Describe with suitable examples, the language characteristics of a client with grammatical disability.

b) Suggest the type of grammatical analysis that you would employ for planning intervention in the above client (8+8=16)

Unit III. 5) What is mental lexicon ? Explain the role of phonological and morphological features in the development of mental lexicon. 16

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6) What is pragmatics ? Describe in detail the stages of pragmatic development in children with its implications for clinical practise. 16

Unit IV. 7) "Sociolinguistics binds researchers from different disciplines for a common cause". Support the statement drawings examples from research in Speech Language Pathology. 16

OR

P.T.O.

8) " The scope of a SpeecH-Ilanguage Pathologist gets enhanced only when a sensitivity to the influence of culture on language is developed". Discuss the above statement with special reference to sociolinguistic issues. **16**

Unit V. 9) a) What are the major language families of India ?

b) Discuss the similarities and differences beteween any two language families with suitable examples. (8+8=16)

OR

10) Write in brief on :

a) Linguistic determinism

b) Linguistic relativity

c) Cultural diversity in India

d) Multilingualism and non-verbal communication.
