MANIPAL UNIVERSITY

FIRST YEAR MOT/M.Sc. (RRT & DT)/ M.Sc. RT/ M.A.S.L.P/M.Sc. MLT/M.Sc. MIT/ M.Sc. ECHOCARDIOGRAPHY/M. OPT DEGREE EXAMINATION – JUNE 2015

SUBJECT: ADVANCED BIOSTATISTICS & RESEARCH METHODOLOGY/ STATISTICS & RESEARCH METHODS/BIOSTATISTICS/EPIDEMIOLOGY & BIOSTATISTICS / RESEARCH METHODOLOGY & BIOSTATISTICS

Tuesday, June 02, 2015

Time: 10:00 – 13:00 Hrs.   Max. Marks: 80

✍   **Answer ALL the questions.**

1A.   With the help of suitable examples discuss the quantitative and qualitative variables.

1B.   Explain systematic random sampling with an example. What are the advantages and disadvantages of this method?

(5+5 = 10 marks)

2A.   Discuss skewness and kurtosis.

2B.   A sample of 50 liver cirrhosis subjects were selected and the mean serum potassium level was observed to be 5.4 mEq/L with standard deviation of 2.5 mEq/L. Find the 95% and 99% confidence intervals for mean serum potassium level among liver cirrhosis subjects. (The standard normal table values for 95% and 99% confidence levels are 1.96 and 2.58 respectively).

(5+5 = 10 marks)

3A.   Enumerate the steps in hypothesis testing.

3B.   What do you mean by non-parametric tests? With suitable examples briefly explain the applications of Mann Whitney U test and Wilcoxon signed rank test.

(5+5 = 10 marks)

4.   The mean serum cholesterol level of 25 randomly selected normal healthy men is 240 mg/dl with a standard deviation of 40 mg/dl. The mean serum cholesterol level of 20 randomly selected men who undergone coronary bypass surgery during the preceding two year period is 260 mg/dl with standard deviation of 56 mg/dl.

4A.   Name the statistical test used for comparing the mean serum cholesterol levels between the two groups.

4B.   Write the null hypothesis and alternate hypothesis for this test.

4C.   What are the assumptions for this test?

4D.   Compute the value of test statistic for the above study.

4E.   Briefly explain how do you take a decision on acceptance and rejection of null hypothesis for the above study.

(1+1+2+4+2 = 10 marks)

5A. Explain how do you compute sample size for comparing means of two independent groups.

5B. A research team conducted a case-control study examining the relationship between daily alcohol consumption and liver cancer. The team selected 2000 cases and 2000 controls and observed that 700 cases and 400 controls daily take alcohol. Make a two by two table and find the appropriate measure of strength of association between alcohol consumption and liver cancer. How do you interpret it?

(5+5 = 10 marks)

6. What do you mean by randomization in RCTs? Explain the simple, block and stratified randomization methods.

(1+9 = 10 marks)

7. Explain the structure of research thesis.

(10 marks)

8. **Write short notes on:**

8A. Survival analysis

8B. Validity and reliability of diagnostic tools

(5+5 = 10 marks)

MANIPAL UNIVERSITY

FIRST YEAR M.A.S.L.P. DEGREE EXAMINATION – JUNE 2015

SUBJECT: SH 102 – CLINICAL LINGUISTICS
(NEW REGULATION)

Thursday, June 04, 2015

Time: 10:00 – 13:00 Hrs.   Max. Marks: 80

✍ **Answer any FIVE questions.**

1. Discuss how pragmatic ability is affected in children with autistic spectrum disorders and mental retardation.

(16 marks)

2. 'Neurolinguistics is the study of relationship between language and the brain.' Explain.

(16 marks)

3. **Write briefly on the following:**

3A. Broca's Aphasia
3B. Agrammatism

(8+8 = 16 marks)

4. Explain how language and cognition are related.

(16 marks)

5. **Write briefly on the following:**

5A. Creole
5B. Language deficit

(8+8 = 16 marks)

6. Discuss why a speech language pathologist needs to be aware of multicultural and multilingual issues.

(16 marks)

7. **Write briefly on the following:**

7A. Sapir-Whorf Hypothesis
7B. Dravidian Language Family

(8+8 = 16 marks)

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FIRST YEAR M.A.S.L.P. DEGREE EXAMINATION – JUNE 2015

SUBJECT: SH 103 – SPEECH SCIENCE AND PRODUCTION
(NEW REGULATION)

Saturday, June 06, 2015

Time: 10:00 – 13:00 Hrs.   Max. Marks: 80

✍ **Answer ALL questions.**

1A. What is the passive and active forces in respiratory function?
1B. Explain the abdominal activity during speech production.

OR

2A. Explain in detail the mechanics of phonation.
2B. What are the cellular structures of the vocal fold?

(12+4 = 16 marks)

3. Explain the neural control of supralaryngeal systems.

(16 marks)

OR

4A. Describe the aerodynamic events which take place during vowel production.
4B. Briefly explain the physiology of the velopharyngeal valve.

(10+6 = 16 marks)

5. Design a speech production model based on your understanding of speech production mechanism.

OR

6. Explain Kozhavnikov and Chistovich model of speech production.

(16 marks)

7A. How do you identify aspiration and frication in a spectrogram?
7B. Describe the acoustic properties of nasal consonants.

(8+8 = 16 marks)

OR

8A. Describe the acoustic features of vowels and diphthongs.
8B. Discuss the applications of acoustic analysis in the field of speech and hearing.

(16 marks)

9. Outline the Infant cry analysis procedure. Discuss any two studies carried out in the field of infant cry analysis in India.

(4+12 = 16 marks)

OR

10. Describe the need for forensic voice evaluation process. How do you carry out forensic analysis procedure in your hospital? What are the limitations of forensic voice evaluation procedure?

(16 marks)

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FIRST YEAR M.A.S.L.P. DEGREE EXAMINATION – JUNE 2015

SUBJECT: SH 104 – SPEECH AND LANGUAGE PROCESSING
(NEW REGULATION)

Tuesday, June 09, 2015

Time: 10:00 – 13:00 Hrs.   Max. Marks: 80

✍ **Answer ALL the questions.**

1A. Explain the cues for perception of vowels. How is the perception of vowels different from consonants?

1B. Compare and contrast the perception nasals and glides.

(10+6 = 16 marks)

OR

2A. What is co-articulation? Explain the factors affecting co-articulation.

2B. Is fundamental frequency an important cue for perception of vowels? Explain.

(8+8 = 16 marks)

3.   Explain various methods to study spoken word recognition.

(16 marks)

OR

4A. Describe the spoken word recognition stage in language processing.

4B. Explain rhyme monitoring task.

(8+8 = 16 marks)

5A. Describe lexical access. Explain the model of lexical access from spectra.

5B. What is a phonetic characterization task?

(12+4 = 16 marks)

OR

6A. Explain an interactive model of spoken word recognition.

6B. Differentiate sentence from word processing.

(10+6 = 16 marks)

7A. Explain acquired alexia, its types and characteristics.

7B. Explain discourse comprehension and production.

OR

8A. Explain word and nonword reading from the perspectives of DRC model.

8B. Explain modularity in sentence processing.

(8+8 = 16 marks)

9. Comment on the recent developments in the field of speech and language processing.

(16 marks)

OR

10A. Explain the role of memory in language processing.

10B. Describe the syntactic processing of language.

(8+8 = 16 marks)

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FIRST YEAR M.A.S.L.P. DEGREE EXAMINATION – JUNE 2015

SUBJECT: SH 105 – VOICE AND FLUENCY DISORDERS
(NEW REGULATION)

Thursday, June 11, 2015

Time: 10:00 – 13:00 Hrs.   Max. Marks: 80

✍   **Answer ALL the questions.**

✍   **Draw neat labeled figures wherever appropriate.**

1A.   Describe the recent advancement in the acoustic evaluation of voice disorders.

1B.   Write in brief, the principle and merits of stroboscopy. Discuss the advantages of stroboscopy.

(12+4 = 16 marks)

OR

2A.   Explain VHI. Write on VHI and its relevance in voice disorders.

2B.   Describe the principle and procedure involved in EGG.

(6+10 = 16 marks)

3A.   Describe the vocal characteristics of transsexual voice.

3B.   Discuss the phonatory behavior observed in geriatrics with reference to structural changes.

(8+8 = 16 marks)

OR

4A.   Elaborate on the pathophysiology of vocal nodules and polyps.

4B.   Discuss the acoustic and perceptual characteristics and the role of vocal hygiene in vocal nodules and polyps.

(6+10 = 16 marks)

5A.   Describe alaryngeal voice in terms of its acoustic and perceptual correlates.

5B.   Describe esophageal insufflation test and its clinical relevance.

(10+6 = 16 marks)

OR

6.   **Write short notes on:**

6A.   Prosthetic aided speech

6B.   Neoglottis vs rima glottis in alaryngeal speakers

6C.   Near total laryngectomy

6D.   Artificial larynx

(4 marks × 4 = 16 marks)

7A. Critically evaluate demand capacity model of stuttering.

7B. Describe stuttering as a learnt disorder.

(8+8 = 16 marks)

OR

8A. Explain the articulatory dynamics in fluency disorders. Support your answers with suitable studies.

8B. Describe the characteristics of Cluttering.

(8+8 = 16 marks)

9A. Describe the management options for preschool children with stuttering.

9B. What is Lidcombe program?

(10+6 = 16 marks)

OR

10A. Describe the formal and informal assessment procedures for an adult with SAAND.

10B. Describe the quality of life measures in stuttering.

10C. Discuss the recovery pattern in childhood stuttering.

(8+4+4 = 16 marks)

MANIPAL UNIVERSITY

FIRST YEAR M.A.S.L.P. DEGREE EXAMINATION – JUNE 2015

SUBJECT: SH 106 – PSYCHOPHYSICS
(NEW REGULATION)

Saturday, June 13, 2015

Time: 10:00 – 13:00 Hrs.   Max. Marks: 80

✍ **Answer ALL questions.**

1A. What is theory of signal detection? Describe the concepts of sensitivity, criterion point and ideal observer.

1B. How do you apply the concept of ROC in differential diagnosis?

OR

2A. What are the factors affecting DL for intensity?

2B. What are absolute and relative differential limens? Explain with examples.

(8+8 = 16 marks)

3A. Define auditory filtering and characteristics of auditory filter.

3B. Describe any two methods to study frequency resolution.

(6+10 = 16 marks)

OR

4A. Elaborate on temporal masking.

4B. Explain mechanism of masking.

(10+6 = 16 marks)

5A. Discuss the factors affecting gap detection threshold.

5B. Discuss the factors affecting TMTF.

OR

6A. Compare and contrast adaptation and fatigue.

6B. What is TTS? Explain in brief the recovery pattern of temporary threshold shift.

(8+8 = 16 marks)

7A. Define pitch and Mel.

7B. Write the mechanism and models for the pitch perception of complex tones.

(4+12 = 16 marks)

OR

8A. Discuss the factors affecting pitch perception of pure tones.

8B. Briefly explain the cues for timbre perception.

(8+8 = 16 marks)

9A. Explain models of localization.

9B. Explain cues for lateralization.

(10+6 = 16 marks)

OR

10A. Explain space perception in detail.

10B. Write a note on Cone of confusion, Binaural beats and pinna shadow effect.

(8+8 = 16 marks)