MANIPAL ACADEMY OF HIGHER EDUCATION
(Deemed University)

FIRST YEAR B.A.S.L.P. DEGREE EXAMINATION – AUGUST 2005

SUBJECT: INTRODUCTION TO SPEECH AND LANGUAGE PATHOLOGY (B.1.1.1)
Monday, August 22, 2005

Time: 3 Hrs. 	Max. Marks: 80

✍ *Question no. 1 is compulsory. Answer any FOUR from the rest.*

1A. Fill in the blanks:
   i) Perceptual parameters of voice are _____, _____ & _____.
   ii) Source filter theory was proposed by _____.
   iii) Velopharyngeal incompetence leads to _____.
   iv) Development of fluency is complete by the age of _____.
   v) _____ & _____ forms the segmental aspects of speech.
   vi) Communication becomes oral if one can use _____.
   vii) Hypernasality can be observed owing to damage to the _____ nerve.

   (10 marks)

1B. Write in not more than 2–3 sentences.
   i) Quality disorder of voice.   ii) Hard glottal attack.   iii) Spectrograph.

   (3×2 = 6 marks)

2A. Define language.
2B. List and explain the components of language.
2C. Describe the development of pragmatics.

   (2+10+4 = 16 marks)

3A. Draw a neat diagram of cortex and label the parts.
3B. Explain the neurophysiology of speech production.

   (10+6 = 16 marks)

4A. Describe the development of voice.
4B. What are the acoustic characteristics of human voice? Explain briefly.

   (10+6 = 16 marks)

5. Describe the speech and language assessment procedures for hearing impaired children.

   (16 marks)

6. Write short notes on:
6A. Cerebral palsy.
6B. Cleft lip and palate.
6C. Dyslexia.
6D. Report writing.

   (4×4 = 16 marks)

MANIPAL ACADEMY OF HIGHER EDUCATION

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FIRST YEAR B.A.S.L.P. DEGREE EXAMINATION – AUGUST 2005

SUBJECT: INTRODUCTION TO AUDIOLOGY (B.1.2.1)

Tuesday, August 23, 2005

Time: 3 Hrs.   Max. Marks: 80

✍ *Question no. 1 is compulsory. Answer any FOUR from the rest.*

1A. In not more than two sentences write on the contribution of:
   i)   Carhart   ii)   Kemp   iii)   Bekesy   iv)   Weber   v)   Helmholtz

                                                                  (2×5 = 10 marks)

1B. Fill in the blanks:
   i)   Cochlear microphonics are generated by _____.
   ii)   The loss of energy of sound as it travels from test ear to non test ear is called as _____.
   iii) The unit of pitch is _____.
   iv)   Symbol used for masked left AC threshold is _____.
   v)   Congenital absence of pinna is known as _____.
   vi)   Stapedial muscle is innervated by _____ cranial nerve.

                                                                  (1×6 = 6 marks)

2.   Discuss the role of middle ear in air conduction and bone conduction sound transmission.

                                                                  (16 marks)

3A. Discuss the similarities and differences between OHC and IHC.
3B. Write a note on causes and audiological correlate for cochlear hair cell damage.

                                                                  (8+8 = 16 marks)

4.   Write about different types of tuning fork tests. Critically evaluate each of them.

                                                                  (16 marks)

5A. Define masking. Write a note on different types of masking.
5B. Critically evaluate various types of noise employed in clinical masking.

                                                                  (8+8 = 16 marks)

6A. Explain the decibel concept.
6B. Prove that doubling of sound power increases the intensity wave by 3dB and doubling of sound pressure increases the intensity by 6dB.

                                                                  (6+10 = 16 marks)

7.   Write short notes on any **FOUR**:
7A. MAP.
7B. Artificial Ear.
7C. Earphone.
7D. Auditory Tube.
7E. Audiometric zero.

                                                                  (4×4 = 16 marks)

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MANIPAL ACADEMY OF HIGHER EDUCATION

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FIRST YEAR B.A.S.L.P. DEGREE EXAMINATION – AUGUST 2005

SUBJECT: BASIC HUMAN ANATOMY AND PHYSIOLOGY (B.1.3.1)

Wednesday, August 24, 2005

Time: 3 Hrs.   Max. Marks: 80

✍ ANSWER SECTIONS – 'A' AND 'B' IN TWO SEPARATE ANSWER BOOKS.
✍ Draw diagrams and flow charts wherever appropriate.

SECTION – A: ANATOMY: 40 MARKS

1. Describe cerebral hemisphere under lobes, important gyri and sulci and cortical functional areas.

(10 marks)

2. Write briefly on:

2A. Organ of Corti.

2B. Paranasal air sinuses.

(5×2 = 10 marks)

3. Write short notes on:

(4×5 = 20 marks)

3A. Arytenoid cartilage.

3B. Oesophagus.

3C. Facial nerve.

3D. Palato pharyngeus muscle.

3E. Development of Thyroid gland.

SECTION – B: PHYSIOLOGY: 40 MARKS

4. Write briefly on each of the following:

4A. Name the receptors for hearing. Draw a labeled diagram of auditory pathway.

4B. Briefly explain the role of baroreceptors in controlling blood pressure.

4C. Draw a labeled diagram of neuromuscular junction. Name any two chemical substances which block neuromuscular transmission.

4D. List two functions of cerebellum and mention two features of cerebellar lesion.

4E. Name the forms in which CO_2 is transported in blood. Give the location of respiratory centres and their role.

(4×5 = 20 marks)

5. Write short answer to any **FIVE** of the following:

5A. Classify deafness. Name two tuning fork tests used to classify deafness. What is audiogram?

5B. Mention four functions of ionic calcium. Name two hormones that regulate plasma calcium level.

5C. Define reflex. Draw a labelled diagram of reflex arc.

5D. Define the following terms:

i) Hypoxia ii) Vital capacity iii) Cyanosis

5E. What is erythropoiesis? List four substances needed for erythropoiesis.

5F. Define: i) excitability ii) contractility iii) Paralysis.

$(3 \times 5 = 15 \text{ marks})$

6. State whether the following statements are TRUE/FALSE:

6A. Otolith organ is present in the semicircular canals.

6B. Normal heart rate is 72 beats/min

6C. Deficiency of growth hormone in infants causes dwarfism.

6D. Tubectomy is a temporary method of family planning.

6E. Normal WBC count is 5000 per mm^3 of blood.

$(1 \times 5 = 5 \text{ marks})$

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MANIPAL ACADEMY OF HIGHER EDUCATION

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FIRST YEAR B.A.S.L.P. DEGREE EXAMINATION – AUGUST 2005

SUBJECT: BASIC ACOUSTICS AND ELECTRONICS (B.1.3.2)

Thursday, August 25, 2005

Time: 3 Hrs.   Max. Marks: 80

✍ *ANSWER SECTIONS 'A' & 'B' IN TWO SEPARATE ANSWER BOOKS.*
✍ *Answer ALL questions.*
✍ *Draw diagrams and flow charts wherever appropriate.*

SECTION – A: BASIC ACOUSTICS : 40 MARKS

1.   Fill in the blanks:

1A.   In a longitudinal wave, medium particles vibrate _____ to the direction of propagation of the wave.

1B.   In case of resistance, energy is _____ and in case of reactance, energy is _____.

1C.   Momentum is _____ with velocity and elasticity is _____ with displacement.

1D.   Sound intensity is the amount of energy transmitted per second over an area of _____.

1E.   A positive signal to noise ratio means the signal level _____ the noise level.

1F.   Broadly tuned systems are always associated with higher _____.

1G.   A pressure anti-node, a point of maximum pressure corresponds to a displacement _____ and is located at the _____ end of the tube.

1H.   Absorption coefficient is _____ of the intensity of the incident sound wave.

1I.   Kinetic energy of a particle is represented by the formula _____.

1J.   The energy dissipating component of impedance is frequency _____.

$(1 \times 10 = 10$ marks$)$

2.   Answer any **TWO** of the following:

2A.   What are filters? Explain the following types of filters with suitable filter curves
      i)   low-pass   ii)   high-pass   iii)   band pass   iv)   band reject

2B.   Explain Doppler effect. Obtain expressions for the apparent frequency of the sound heard,
      i)   when the source is moving towards a stationary observer.
      ii)   when the source is moving away from the stationary observer.

2C.   Define sound intensity. Explain how it can be expressed in terms of absolute and relative terms. What is the importance of specifying reference intensity? 14 dB correspond to what intensity ratio? Given: $\text{antilog}_{10} 0.4 = 2.51$.

$(5 \times 2 = 10$ marks$)$

3.   Answer any **FIVE** of the following:

3A.   Explain how the energy and momentum of a simple pendulum varies during an oscillation.

3B.   i)   Define pressure and work and write their units in SI system.
      ii)   Speed of sound is greater in steel when compared to air. Justify the statement.

3C.   i)   Define bel and decibel.
      ii)   What is the intensity level (re: 10^{-12} watt/m^2) of a sound with an intensity of 4×10^{-5} watt/m^2? Given: $\log_{10} 4 = 0.6$.

3D. Define Fourier theorem. With an example explain how it is applicable to complex waves.

3E. i) Explain pressure spectrum level.

ii) A white noise signal has a bandwidth of 9000 Hz and an overall level of 72 dB SPL. Calculate the pressure spectrum level? Given $\log_{10}3 = 0.48$.

3F. An audiometric test room has a volume of $22.5 \ m^3$ and a surface area of $48m^2$. The surface of the room has an average sound absorption co-efficient of 0.3. Using Eyring's formula, calculate the reverberation time of the room assuming it to be empty. What reverberation time is expected if the average absorption co-efficient is doubled?

3G. Write a note on anechoic sound isolated rooms. To test the status of a person's hearing which type of rooms are commonly used and why?

(4×5 = 20 marks)

SECTION – B : BASIC ELECTRONICS: 40 MARKS

4. Fill in the blanks:

4A. A filter which reduces 50 Hz power supply hum is called _____.

4B. Two different kinds of tape noise are _____ and _____.

4C. When one ampere current flows through a coil of two henry, the energy stored is _____ joules.

4D. The unit of permittivity is _____.

4E. In a zener diode voltage regulators, the diode is always _____ biased.

4F. The pentavalent impurity is called _____ impurity.

4G. In resistance colour coding the value of 7 is represented by _____ colour.

4H. In the active region of a common-emitter amplifier the collector-base junction is _____ biased.

4I. Transistor is a _____ controlled device.

4J. _____ converts sound signal to electrical signal.

(1×10 = 10 marks)

5. Answer any **FIVE** of the following:

5A. Draw and explain V-I characteristics of a p-n junction diode.

5B. Draw and explain the operation of Common-Emitter (CE) amplifier.

5C. Explain the need for a filter circuit in a rectifier. Describe the working of a capacitor filter for a fullwave rectifier.

5D. With the help of energy band diagrams, distinguish between semiconductor, conductor and insulator.

5E. Explain the construction and working of dynamic loud speaker.

5F. With a neat circuit diagram and characteristic graph, explain the working of passive filter.

5G. Explain the properties of electrical engineering materials.

(6×5 = 30 marks)

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FIRST YEAR B.A.S.L.P. DEGREE EXAMINATION – AUGUST 2005
SUBJECT: INTRODUCTION TO LINGUISTICS (B.1.3.3)
Friday, August 26, 2005

Time: 3 Hrs.   Max. Marks: 80

✍ *Answer all the questions. Provide diagrams and examples where possible.*

1. How do you differentiate animal communication from human language?
    ### OR
    'All living languages have changed and continue to change' – Discuss.

    (10 marks)

2. What are the limitations of phrase structure grammar?
    ### OR
    What is Lexicology? Why is it difficult to give a satisfactory definition? State a few methods of word formation.

    (10 marks)

3. What is phonetics? Discuss the main areas of it.
    ### OR
    What are the similarities and differences between vowels and consonants?

    (10 marks)

4. Explain derivational morphology and inflectional morphology with examples.
    ### OR
    What are segmental and supra segmental features? Explain with examples.

    (10 marks)

5. Write short notes on any **SIX** of the following:
5A. Language is arbitrary.
5B. Historical linguistics.
5C. Formative grammar.
5D. American English.
5E. Diglossia.
5F. Trills.
5G. Semi vowels.
5H. Consonant clusters.
5I. Hiatus.
5J. Syllables.

(3×6 = 18 marks)

6. Write short answers and differentiate the following:
6A. Complex word and compound word.
6B. Fricatives and afficates.
6C. Synonymy and hyponymy.
6D. Voiced and Voiceless phonemes.

(1× 4 = 4 marks)

B.1.3.3   Page 1 of 2

7. Write whether the statements below are **TRUE** or **FALSE**.
7A. The letter b in English word <u>ball</u> represents a voiceless bi-labial plosive.
7B. In the word <u>lovely</u> ly is a suffix.
7C. No two languages will have identical phonological system.
7D. Content word should be stressed in speech and reading.
7E. The last phoneme in the words <u>make</u>, <u>laughed</u>, <u>packed</u> are voiceless.
7F. All vowels are voiced.
7G. During the production of a nasal sound, air is allowed to escape through nostrils.

(1×7 = 7 marks)

8. Fill in the blanks:
8A. _____ is open back vowel sound.
8B. A vowel glide is called a _____.
8C. In isolating language the word in it is made up of one _____.
8D. _____ is the shortest phoneme in English.
8E. A person with a cut lip can't produce the phoneme _____ clearly.

(1×5 = 5 marks)

9. Transcribe the following words phonemically using BBC pronunciation:
9A. boil
9B. spoon
9C. crush
9D. born
9E. rounded
9F. match
9G. heart
9H. polite
9I. school
9J. new
9K. ten
9L. late.

(½ × 12 = 6 marks)

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FIRST YEAR B.A.S.L.P. DEGREE EXAMINATION – AUGUST 2005

SUBJECT: PSYCHOLOGY RELATED TO SPEECH AND HEARING (B.1.3.4)
Saturday, August 27, 2005

Time: 3 Hours   Max. Marks: 80

✎ *Answer any EIGHT of the following. All questions carry equal marks.*

1. Describe the principal methods of study in psychology with suitable examples.

2. Explain any three perspectives of normality.

3. What is conditioning? Bring out the principles of classical conditioning.

4. Define clinical psychology. Examine the role of clinical psychology in the management of speech disorders.

5. What are the objectives of Psychiatric classification? Highlight the principal categories of Psychiatric disorders according to ICD-10.

6. Define abnormality. Explain any 3 models that describe the etiology of abnormal behavior.

7. Give a brief outline of neurotic disorders according to ICD-10.

8. What is personality? List out the important stages of personality development as proposed by Erickson.

9. Compare and contrast Indian and western concepts of mental illness.

10. Write short notes on any two of the following:

10A. Moral development.

10B. Psychosocial rehabilitation.

10C. Attachment.