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# MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

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

### SUBJECT: INTRODUCTION TO SPEECH AND LANGUAGE PATHOLOGY (B.1.1.1)

Wednesday, June 01, 2005

Time: 3 Hrs. Max. Marks: 80

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

1A. Fill in the blanks:

i) Orbicular oris is one of the muscles of _____ and is important for the production of _____ sounds.

ii) During speech expiration, _____ percent of the respiratory cycle is being utilized.

iii) _____ is a frequency measure of the spectrogram reflecting the vocal tract configuration.

iv) Speaking fundamental frequency (SF0) is usually _____ than F0 during phonation.

v) Bliss symbol is a _____ form of communication.

vi) Vocal cord paralysis leads to _____ disorder of voice.

vii) MPT reflects the integrity of _____ and _____ systems.

viii) _____ is a neurogenic motor speech disorder.

(10 marks)

1B. Differentiate:

i) Prephonatory phase vs simultaneous attack phase.

ii) Mirror vs tape recorder in speech therapy.

iii) Arytenoid vs Cricoid cartilage.

(3×2= 6 marks)

2A. Explain the parameters of Fluency.

2B. Describe the development of fluency.

2C. What are the factors influencing fluency development?

(4+8+4=16 marks)

3. Describe the muscles of the larynx with their nerve supply and functions.

(16 marks)

4A. How do you assess a child with misarticulation?

4B. Mention the various types of misarticulations with appropriate examples.

4C. What is phonological disorder?

(10+4+2 = 16 marks)

5. Describe the neurophysiological model of speech production. How do you explain the speech and language disorder based on this model?

(16 marks)

6. Write short notes on:

6A. Subglottal pressure.

6B. Dysphonia.

6C. Hearing impaired children.

6D. Opportunities for SLPs.

(4×4 =16 marks)

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# MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

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

### SUBJECT: INTRODUCTION TO AUDIOLOGY

Thursday, June 02, 2005

Time: 3 Hrs. Max. Marks: 80

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

1A. Explain in not more than 2–3 sentences:

i. Localization ii. Adaptation iii. Shadowgram
iv. Standing wave v. SLM.

(2×5 = 10 marks)

1B. Differentiate:

i. perilymph vs endolymph.
ii. tympanic membrane vs secondary tympanic membrane.
iii. air conduction vs bone conduction.

(2×3 = 06 marks)

2A. Discuss the factors which affect AC and BC thresholds.
2B. In a tabular form, list the major causes of conductive hearing loss.

(8+8 = 16 marks)

3A. Explain the relevance of dB concept in clinical audiology.
3B. How does the middle ear act as a transformer and what are its implications to hearing?

(8+8 = 16 marks)

4A. Explain the terms test ear, not test ear, adequate masking, under masking and over masking.
4B. When is masking warranted in A.C and B.C?

(8+8 = 16 marks)

5A. Briefly explain sound treatment methods employed while constructing an audiology test room.
5B. How would you biologically calibrate your audiometer for A.C. and B.C.?

(10+6 = 16 marks)

6A. Draw a neat diagram of the Organ of Corti and label the parts.
6B. With a schematic diagram, explain the ascending auditory pathway.

(10+6=16 marks)

7. Write short notes on ***any four***:
7A. Resonance theory
7B. Equal loudness contour
7C. SRT
7D. Missing 6 dB
7E. Modern theory of bone conduction.

(4×4 = 16 marks)

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# MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

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

### SUBJECT: BASIC HUMAN ANATOMY AND PHYSIOLOGY

Friday, June 03, 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 the cartilages of larynx in detail.

(10 marks)

2. Write briefly on:

2A. Oesophagus.

2B. Auditory tube.

(5×2= 10 marks)

3. Write short notes on:

(5×4 = 20 marks)

3A. Dorsum of tongue.

3B. Tensor palati muscle.

3C. Synovial joint.

3D. Derivatives of I bronchial arch.

3E. Spinal cord.

## SECTION – B: PHYSIOLOGY: 40 MARKS

4. Write briefly on each of the following:

4A. Describe the tuning fork tests of hearing. How are they useful in differentiating the different types of Deafness?

4B. Name the functional lobes of cerebellum and their functions. Mention any 4 features of cerebellar lesion.

4C. Draw a labeled diagram of Monophasic Action potential recorded from single axon. Mention the ions responsible for each phase.

4D. Define ECG. Draw a neat labeled diagram of ECG recorded from limb lead II. List 2 uses of ECG.

4E. Define and classify hypoxia. Give one example for each type. Which types of hypoxia can show cyanosis.

(4×5 = 20 marks)

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

5A. Mention any 4 functions of plasma proteins. Briefly explain any one of them.

5B. Draw a labeled diagram of alveolo-capillary membrane. Mention the factors affecting diffusion of gases across the membrane.

5C. Name the hypoglycemic hormone. Mention the mechanisms by which it lowers blood glucose level.

5D. In a tabular column give the differences between I and II heart sounds. Name the Auscultatory areas.

5E. Draw and label the diagram of Dorsal column tract.

5F. Name the receptors of Vestibular Apparatus and mention its significance.

(3×5 = 15 marks)

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

6A. Normal vital capacity in Adults is 125 ml/$m^2$/BSA.

6B. In a 32 day menstrual cycle, ovulation is most likely to occur on $14^{th}$ day.

6C. Oxytocin causes milk ejection.

6D. 'O' blood group individuals contain both anti-A and anti-B agglutinins in their serum.

6E. Impedance matching is the function of External Ear.

(1×5 = 5 marks)

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# MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

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

### SUBJECT: BASIC ACOUSTICS AND ELECTRONICS (B.1.3.2)

Monday, June 06, 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. _____ force is responsible for an oscillating body to approach equilibrium.

1B. Particle velocity waveform _____ the particle displacement waveform by 90°

1C. Impedance of a system has two components, an energy dissipating component called _____ which is frequency independent and an energy storage component called _____ which is frequency dependent.

1D. A decibel is _____ of a bel.

1E. Intensity ratio of 10:1 corresponds to 10dB and a pressure ratio of 10:1 corresponds to ____dB.

1F. Square wave consists of frequency components that are _____ multiples of fundamental frequency.

1G. Pitch of the note depends on _____ of the wave.

1H. At the natural frequency of the system, impedance is _____ and admittance is _____.

1I. The rate at which the periodic increases and decreases in amplitude occur is called _____.

1J. Average length of the vocal tract for an adult male is _____.

(1×10 = 10 marks)

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

2A. What is damping? Explain graphically how amplitude varies in low damped, highly damped and critically damped system. Write the expression for damping factor and explain the notations.

2B. Explain the effects of variations in the starting phase on the shape of complex wave that results from summation of sine waves.

2C. With relevant theory how standing wave patterns with series of resonances are formed by the displacement of air mass in,

i) a tube that is open at one end and closed at the other.

ii) a tube open at both ends.

(5×2 = 10 marks)

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

3A. Discuss the transfer of energy in slow vibration of a simple pendulum. Also, explain the state of momentum at different positions of the pendulum.

3B. With an example explain how the rectilinear motion can be represented as uniform circular motion.

3C. With an example explain how the total SPL that results by combining sources of
i) equal intensity ii) unequal intensities, are calculated.

3D. Explain the waveform and amplitude spectrum of a pulse train.

3E. Explain resonance. Explain the effects of impedance on a resonance curve.

3F. i) An increase in intensity by a factor 2:1 corresponds to how many dB? Given $\log_{10} 2 = 0.3010$.

ii) A sound pressure level of 65 dB (re: $2\times10^{1}$ μPa) corresponds to what sound pressure? Given: $\text{antilog}_{10} 3.25 = 1.78 \times 10^{3}$.

3G. Explain sound wave refraction and absorption.

(4×5 = 20 marks)

## SECTION – B : BASIC ELECTRONICS: 40 MARKS

4. Fill in the blanks:

4A. The barrier potential for a silicon diode is approximately _____ volts.

4B. The lower critical frequency of a direct coupled amplifier with no bypass capacitor is _____

4C. The quality factor (Q) of a band pass filter depends on _____ and _____

4D. An example of non volatile memory is _____

4E. A carbon resistor having colour code brown, blue, red bands has the resistance of _____ohms.

4F. The unit of permeability is _____

4G. The example for passive circuit elements are _____, _____ and _____.

4H. Two different kind of tape noise are _____ and _____

4I. The sound level meter is used for determination of _____

4J. Multimeters are capable of measuring _____, _____ and _____.

(1×10 = 10 marks)

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

5A. Describe the differences between donor and acceptor impurities.

5B. Explain fullwave bridge rectifier with a neat circuit diagram and relevant waveforms.

5C. Compare direct recording with FM recording.

5D. With a neat block diagram explain the principle of working of hearing aid.

5E. Draw the schematic block diagram of a microprocessor and explain the function of each block.

5F. Draw and explain the frequency response characteristics of an RC coupled amplifier.

5G. Write short notes on:
i) Oscillator ii) magnetic materials.

(6×5 = 30 marks)

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# MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

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

### SUBJECT: INTRODUCTION TO LINGUISTICS (B.1.3.3)

Tuesday, June 07, 2005

Time: 3 Hrs. Max. Marks: 80

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

1. What are the main differences between animal communication and human communication?

**OR**

Why is Linguistics called a science? Explain the various branches of Linguistics.

(10 marks)

2. What is Phrase structure grammar? What are its main demerits?

**OR**

What is semantics? What are its various features?

(10 marks)

3. Draw a neat diagram of human speech organs and name them. How are they useful in producing English speech sounds?

**OR**

How is a vowel described? Explain how vowels are produced? Describe them.

(10 marks)

4. Differentiate the following:

4A. Oral sounds, nasal sounds.
4B. Strong forms, weak forms.
4C. Primary cardinal vowels, secondary cardinal vowels.
4D. Vowels, semivowels.
4E. Dental sounds, labio dental sounds.

(10 marks)

5. Write short notes on any **FIVE** of the following:

5A. egressive airstream.
5B. dorsum
5C. psycholinguistics
5D. dialect
5E. allomorph
5F. intonation
5G. primary cardinal vowels.

(3×5 = 15 marks)

6. Say whether the statements below are true or false in relation to linguistics.

6A. There are only five vowel phonemes in English.
6B. When we breathe normally our vocal cords vibrate.
6C. For the articulation of any speech sound, we need two articulators.
6D. The English word 'tongue' ends with a nasal consonant.

6E. A complex word consists of three or more morpheme.
6F. 'Just a minute' is an example of minor sentence.
6G. A clause doesn't contain a verb.
6H. Inflectional morphemes do not change the parts of speech.
6I. In English /ʌ/ is a short, open centralized vowel.
6J. English phoneme /ð/ does not occur finally in any word.

(½ × 10 = 5 marks)

7. Fill in the blanks with suitable words.
7A. When the phoneme _____ is articulated the back of the tongue touches the soft palate.
7B. Sequence of consonants are known as _____.
7C. _____ is a voiced dental fricative vowel.
7D. When the airstream mechanism is used to push the air out, it is called _____.
7E. Clear I occurs in a word like _____.
7F. In the word 'dangerously' there are _____ morphemes.
7G. _____ means many meanings in semantics.
7H. 'Pop your clogs' is an _____.
7I. Pitch, stress, tone, intonation and tempo are called _____ features.
7J. The final phoneme in the word 'looked' is _____.

(1×10 = 10 marks)

8. Match the following:

| SET I | | SET II | |
|---|---|---|---|
| A. | affricate | i. | '// |
| B. | glottal fricative | ii. | compound word |
| C. | battle | iii. | Laugh |
| D. | alveolar nasal | iv. | Meet |
| E. | dorsum | v. | syllabic consonant |
| F. | football player | vi. | negative prefix |
| G. | clear I | vii. | bench |
| H. | weak form of 'shall' or 'will' | viii. | head |
| I. | irregular | ix. | back of the tongue |
| J. | front high long vowel | x. | never |

(½ × 10 = 5 marks)

9. Write the following words in phonemic symbol as pronounced in BBC English:
9A. rough
9B. try
9C. reduce
9D. show
9E. citizen
9F. coach
9G. fooled
9H. jungle
9I. fear
9J. tyre.

(½ × 10 = 5 marks)

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# MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

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

**SUBJECT: PSYCHOLOGY OF LEARNING AND DEVELOPMENTAL PSYCHOLOGY (B.1.3.4)**

Wednesday, June 08, 2005

Time: 3 Hours Max. Marks: 80

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

1. Evaluate the oriental and Indian concepts of mental health and illness.

2. Name the important systems of psychiatric classification. Mention the principal groups of disorders according to ICD-10.

3. What is conditioning? Explain the applications of classical and operant conditioning principles in various speech problems.

4. Discuss any two models regarding the etiology of psychiatric disorders.

5. Explain the following:

5A. Emotional development in childhood.

5B. Theories of language development.

6. Explain the various stages of cognitive development as proposed by Piaget.

7. Describe the following:

7A. Moral development.

7B. Psychosocial rehabilitation.

8. What is memory? Elucidate the biological basis of memory.

9. Discuss the role of clinical psychology in speech related disorders.

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

10A. Personality assessment.

10B. Cognitive learning.

10C. Observation method.