

MANIPAL UNIVERSITY

FIRST YEAR B.A.S.L.P. DEGREE EXAMINATION – JUNE 2010

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

Monday, June 07, 2010

Time: 10.00-13.00 Hrs.

Max. Marks: 80

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

1A. Fill in the blanks:

- i) _____ is an important brain area responsible for speech production.
- ii) Fifth cranial nerve is known as _____
- iii) A leaf shaped cartilage in the larynx is _____
- iv) Manner of articulation for /p/ is _____
- v) Deep layer of the vocal fold is made up of _____
- vi) LCA is _____ muscle of the vocal folds.
- vii) Harmonics are _____ of fundamental frequency.
- viii) The space between the true vocal fold is _____
- ix) Air pressure measured below the vocal fold is _____
- x) Puberphonia is a disorder of _____

1B. Differentiate:

- i) Quiet breathing Vs Speech breathing
- ii) Inspiratory reserve volume Vs Expiratory reserve volume
- iii) LCA Vs PCA
- iv) Prosody Vs Pragmatics
- v) Vocal abuse Vs Vocal misuse
- vi) Fundamental frequency Vs Formant frequency

(10+(1×6) = 16 marks)

2A. Define Speech.

2B. Write a note on classification of speech disorders.

2C. Briefly discuss the causes and characteristics of fluency disorders.

(2+6+8 = 16 marks)

3A. Briefly discuss the source filter theory of speech production.

3B. Discuss the acoustic correlates of voice.

(8+8 = 16 marks)

4A. Describe the cartilages of larynx with neat diagrams.

4B. Discuss briefly the physiology of voice production.

(8+8 = 16 marks)

- 5A. What is Misarticulation? Explain the different types of misarticulations.
- 5B. Brief about the causes for Misarticulation.
- 5C. Explain the importance of OSME procedure.

(6+6+4 = 16 marks)

6. **Write short notes on:**

- 6A. Prelinguistic skills
- 6B. Development of voice
- 6C. Aphasia
- 6D. SLPM model

(4×4 = 16 marks)



MANIPAL UNIVERSITY

FIRST YEAR B.A.S.L.P. DEGREE EXAMINATION – JUNE 2010

SUBJECT: BASIC ACOUSTICS AND ELECTRONICS (B.1.3.2)

Wednesday, June 09, 2010

Time: 10.00-13.00 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. Mach number is the ratio of the speed of air _____ plane to the speed of sound.
 1B. The pattern for resonant frequencies of a tube closed at both ends is same as that for a tube at _____.
 1C. Attenuation rate for idealized rectangular filter is _____.
 1D. Horns are used in _____ and are acoustic impedance devices.
 1E. The frequency of vibration of the vocal folds depends mainly on the length, cross-sectional mass and _____ of the folds.
 1F. Pink noise have equal energy per _____.
 1G. Potential energy for a particle executing simple harmonic motion is _____ at maximum displacement position.
 1H. Decibel can also be defined as 20 times logarithm of a _____ ratio.
 1I. As the sound intensity is doubled, the level is increased by _____.
 1J. The nearer the frequency of the applied force to the _____ of the elastic system, the greater will be the resulting _____ of vibration.

(1×10 = 10 marks)

2. Answer any TWO of the following:

- 2A. 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 observer is moving towards a stationary source
 iii) When the source is moving away from the stationary observer.
 2B. Define Fourier theorem applicable to complex periodic waves. Explain the waveform, amplitude spectrum and phase spectrum of a triangular wave.
 2C. Explain the term acoustic impedance. Explain its components. Draw phasor diagram showing the impedance vector resulting from compliant reactance, mass reactance and resistance. What is the magnitude of the impedance vector?

(5×2 = 10 marks)

3. Answer any FIVE of the following:

- 3A. With an example, discuss the phenomenon of beats.
 3B. What do you know about noise? What are the sources of noise? What do you mean by signal to noise ratio. How do you insulate a room from noise?

- 3C. Explain pitch and loudness – the characteristics of speech sound.
- 3D. i) If the SPL at a distance of 100 m is 80 dB, what is the SPL at a distance of 850 m?
Given: $\log_{10}850 = 2.9294$.
- ii) Write the equation for the period (T) of the pendulum with symbols/notations explained. How does frequency varies with the length of the pendulum?
- 3E. What are the characteristics of standing waves? How these are formed in a tube (air column) closed at one end and open at the other?
- 3F. Explain the vibratory motion of a tuning fork, explaining in detail the role of applied force, restoring force and inertial force.
- 3G. Define force, pressure, energy, work and power with proper units in SI system.

(4×5 = 20 marks)

SECTION – B : BASIC ELECTRONICS: 40 MARKS

4. Fill in the blanks:

- 4A. In an inductor, if the current is constant, then the voltage across it is _____.
- 4B. When filters are cascaded, the roll-off rate _____.
- 4C. In _____ amplifier a steady current flows through it to the receiver even when the amplifier is not receiving any audio signal.
- 4D. _____ microphone responds to particle velocity rather than to sound pressure.
- 4E. Carbon microphone cannot be used for _____ work.
- 4F. The percentage of electrical power radiated as sound determines the _____ of the loud speaker.
- 4G. The most widely used noise reduction method is the _____ system.
- 4H. _____ expresses the ratio of audio signal to noise for a strong input signal.
- 4I. The CPU places control commands on the _____ bus.
- 4J. _____ device displays the frequency content of the speech signal.

(1×10 = 10 marks)

5. Answer any FIVE of the following:

- 5A. i) Classify the Oscillators and explain their applications.
ii) Draw the electrical equivalent circuit of crystal oscillator and explain the working of crystal oscillator.
- 5B. Which type of microphone is sensitive to acoustic velocity rather than pressure? With a neat diagram explain it.
- 5C. Why is a small loudspeaker cone preferred for radiating high-frequency sound? With a neat circuit diagram and graph explain Two-Way Crossover network.
- 5D. Explain FM recording and digital recording.
- 5E. Explain the working of super heterodyne receiver. Also define sensitivity, selectivity and capture ratio.
- 5F. Mention the characteristics of linear integrated circuits and digital integrated circuits and their applications.
- 5G. Write a note on: i) Hearing aid ii) Sound level meter

(6×5 = 30 marks)



MANIPAL UNIVERSITY

FIRST YEAR B.A.S.L.P. DEGREE EXAMINATION – JUNE 2010

SUBJECT: BASIC HUMAN ANATOMY AND PHYSIOLOGY

Friday, June 11, 2010

Time: 10.00-13.00 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

- ✍ **Draw diagrams wherever necessary.**

1. Name the muscles of the pharynx. Give the attachments, nerve supply and actions of the constrictor muscles.

(3+4+2+1 = 10 marks)

2. **Write briefly on:**

- 2A. Auditory pathway.
 2B. Development of palate and its anomalies.

(5×2 = 10 marks)

3. **Write short notes on:**

- 3A. Inlet of the larynx.
 3B. Intrapetrous course of facial nerve.
 3C. Right coronary artery.
 3D. Sensory innervation of the tongue.
 3E. Chromosomes.

(4×5 = 20 marks)

SECTION – B: PHYSIOLOGY: 40 MARKS

4. **Answer the following questions:**

- 4A. Draw a labeled graph of Electrocardiogram (ECG). Mention the different waves and cause for each wave.
 4B. Mention two functions of thyroid hormones. List any three clinical features of cretinism.
 4C. Describe the chemical regulation of respiration.
 4D. In the form of a flow chart, write the intrinsic mechanism of coagulation of blood.

(5×4 = 20 marks)

5. **Answer the following questions:**

- 5A. Mention two functions of plasma proteins.
 5B. List two differences between first and second heart sounds.
 5C. Name the functional areas of cerebral cortex.
 5D. Name the types of smooth muscle.
 5E. Which parts of the nephron function as the countercurrent multiplier and countercurrent exchanger respectively?
 5F. Enumerate two functions of saliva.
 5G. Mention two functions of middle ear.
 5H. Describe the stages of spermatogenesis.
 5I. Define hypoxia and cyanosis.
 5J. Mention two functions of cerebellum.

(2×10 = 20 marks)



MANIPAL UNIVERSITY

FIRST YEAR B.A.S.L.P. DEGREE EXAMINATION – JUNE 2010

SUBJECT: INTRODUCTION TO AUDIOLOGY (B.1.2.1)

Monday, June 14, 2010

Time: 10.00-13.00 Hrs.

Max. Marks: 80

✍ **Answer any FIVE questions. Question no. 6 is compulsory.**

1A. Differentiate:

- i) Wavelengths of low frequency Vs High frequency tone
- ii) Power scale Vs pressure scale in sound intensity
- iii) Circum aural Vs supra aural ear phones
- iv) Audiometric zero Vs 0 dB SPL
- v) Rinne –ve Vs false Rinne –ve
- vi) Perilymph Vs endolymph
- vii) White noise Vs narrow band noise
- viii) Head phone Vs insert earphone
- ix) dBHL Vs dB SL
- x) Descending Vs bracketing method

(1×10 = 10 marks)

1B. Write the principle behind:

- i) Rinne's test
- ii) Ducted mechanical ventilation
- iii) Effective masking
- iv) Bing test
- v) Using mild SN loss patients for BC calibration
- vi) Stringent noise levels for BC testing.

(1×6 = 6 marks)

2A. Differentiate the purpose of pure tone and speech audiometry.

(2 marks)

2B. Explain the mechanism of bone conduction.

(6 marks)

2C. Write on the standards as applicable to AC and BC.

(2 marks)

2D. Discuss the mechanism of binaural hearing.

(6 marks)

3A. What problems would one encounter while testing unilateral/ bilateral unequal hearing loss cases? What is the solution?

(2 marks)

3B. Explain: Cross over, Cross hearing, Interaural attenuation, Insert masking, Effective masking, Plateau method, Critical band concept.

(14 marks)

4. Elaborate on any FOUR:

- 4A. "Human ear is not equally sensitive at all the frequencies".
- 4B. "All the three parts of the ear contribute to bone conduction".
- 4C. "At high frequencies, the skull vibrates in segment".
- 4D. "Sound has both physical and psychological correlates".
- 4E. "Baffles are a must for mechanical ducted ventilation".

(4×4 = 16 marks)

5A. Explain the purpose of the following in calibration:

- i) Piston phone
- ii) Octave filter in SLM
- iii) GLR
- iv) Frequency contour
- v) accelerometer
- vi) Adaptor
- vii) Condenser microphone
- viii) Spring balance
- ix) RETFL values
- x) distortion meter

(1×10 = 10 marks)

5B. At a setting of 1 kHz and 60 dB, the output of your audiometer is 77 dB SPL. Is the audiometer in calibration? If not, what is the correction factor that you would employ? Justify your action.

(6 marks)

- 6A. Draw a neat diagram of the tympanic membrane and label the parts.
- 6B. What is the contribution of the ear canal in auditory physiology?
- 6C. What are the cochlear potentials? Write briefly about them.
- 6D. Describe the volley theory of hearing.

(4×4 = 16 marks)

7. Write short notes on any FOUR:

- 7A. Non syndromic hearing loss.
- 7B. Bing test.
- 7C. Pitfalls of Puretone audiometry.
- 7D. Audiometric zero.
- 7E. Immittance audiometry.

(4×4 = 16 marks)



MANIPAL UNIVERSITY**FIRST YEAR B.A.S.L.P. DEGREE EXAMINATION – JUNE 2010****SUBJECT: INTRODUCTION TO LINGUISTICS (B.1.3.3)**

Wednesday, June 16, 2010

Time: 10.00-13.00 Hrs.

Max. Marks: 80

1. Answer any FOUR of the following.

- 1A. What is a language? What are the properties of a language with particular reference to English?
- 1B. What are primary cardinal vowels and secondary cardinal vowels? Draw diagrams showing the positions of mouth. How do you describe a vowel? Give descriptions of the vowel / u: /.
- 1C. What is graphemics or graphic linguistics? What are the features of English letters? What are the problems that a non-native speaker has to face in understanding the spelling system of English?
- 1D. Analyse the features of suprasegmentals of English speech, provide examples to strengthen your statements.
- 1E. Draw a diagram of the tongue with their parts. What are the phonemes that are produced with the help of this speech organ?
- 1F. What is phrase structure grammar? What are its defects to support it religiously?

(10×4 = 40 marks)

2. Write short notes on any EIGHT of the following.

- 2A. dialect and accents
- 2B. difference between monophthongs and diphthongs
- 2C. conjunctions
- 2D. suffixes and prefixes
- 2E. main branches of phonetics
- 2F. regressive assimilation
- 2G. juncture
- 2H. pairs of minimal contrast
- 2I. Clear l and dark l
- 2J. langue and parole.

(2½×8 = 20 marks)

3. Say whether the statement below are True or False.

- 3A. Vowels and diphthongs are known as triphthongs.
- 3B. All vowels are voiced.
- 3C. When oral phonemes are articulated, nasal passage is open.
- 3D. Bags is a simple word.
- 3E. /ɜ:/ in burn is a central vowel.
- 3F. Sociolinguistics deals with the growth and development of a language.
- 3G. A syllable should have all the three parts.

3H. 'May I take it away' is spoken with four diphthongs.

3I. short has a long vowel and long has a short vowel.

3J. Slang is called code switching.

($\frac{1}{2} \times 10 = 5$ marks)

4. Fill in the blank using the right word.

4A. In 'Wednesday' the stress falls on the _____ syllable.

4B. The tip of the tongue is called _____.

4C. An open syllable ends with a _____.

4D. Stress is also known as _____.

4E. 'What are you doing?' The word underlined is pronounced _____ in rapid speech.

4F. Prepositions, conjunctions, pronouns and articles are called _____ words.

4G. The name of English letter h is pronounced _____.

4H. The vowel in higher is a _____.

4I. I admire your friendly gesture. The word underlined comes under the word class _____.

4J. 'How sweet the song is!' is an _____ sentence.

($\frac{1}{2} \times 10 = 5$ marks)

5. Match the following.

- | | |
|------------------------|--------------------------|
| 5A. chair | progressive assimilation |
| 5B. player | phrase marker |
| 5C. / h / | dorsum |
| 5D. kurkuri | hiatus |
| 5E. <u>ir</u> regular | triphthong |
| 5F. my_ <u>arm</u> | negative morpheme |
| 5G. barked | glottal fricative |
| 5H. back of the tongue | allomorph |
| 5I. S → NP+VP | coinage |
| 5J. leg <u>s</u> | free morpheme |

($\frac{1}{2} \times 10 = 5$ marks)

6. Transcribe the following into phonemic notation.

6A. grass

6B. stock

6C. heard

6D. carry

6E. guess

6F. waiter

6G. bank

6H. way

6I. moisture

6J. white

($\frac{1}{2} \times 10 = 5$ marks)



Reg. No.

MANIPAL UNIVERSITY

FIRST YEAR B.A.S.L.P. DEGREE EXAMINATION – JUNE 2010

SUBJECT: PSYCHOLOGY RELATED TO SPEECH AND HEARING (B.1.3.4)

Friday, June 18, 2010

Time: 10.00-13.00 Hours

Max. Marks: 8

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

1. Describe any three important models of mental disorders.
2. Define Personality and describe psychodynamic perspective of personality.
3. Examine the role of learning with reference to speech and language functions.
4. Explain any three operant procedures used in the treatment of behavioral problems.
5. Define psychological tests and describe any three intelligence tests.
6. Describe Piaget's model of cognitive development.
7. Describe any four methods of psychology.
8. Compare the Oriental and western concepts of mental health and illness.
9. What is rehabilitation? Discuss the key concepts of psychosocial rehabilitation.
10. **Write short notes on any TWO of the following:**
 - 10A. Transfer of learning.
 - 10B. Attachment.
 - 10C. Types of memory.

