

AB 010

M.Sc. (II Semester) Examination, May/June 2005
(Semester Scheme)
Audiology
Neurophysiology of Hearing

Time: 3 Hours

Max. Marks: 80

Instruction: Answer all questions.

- I. 1. Explain the coding of complex signals in the auditory nerve. 16**
- OR**
- 2. a) Describe frequency coding in the auditory curve. 8**
- . b) How do you explain the sharpness of the tuning curve of the auditory nerve ? 8**
- II. 3. Describe, in detail the importance of SOC in sound localization. 16**
- OR**
- 4. Explain the cells seen in the AVCN and discuss their physiology. 16**
- III. 5. Write an essay on the tonotopicity of auditory cortex. 16**
- OR**
- 6. Explain, in detail, about the anatomical structure of the auditory cortex. 16**
- IV. 7. Discuss the role of efferent auditory system in the perception of auditory stimuli. 16**
- 8. Explain the course of the facial nerve and its importance in auditory physiology. 16**
- V. 9. Discuss the properties of neurotransmitter related to hearing and their role in hearing. 16**
- OR**
- 10. What is role of efferent neurotransmitters in hearing ? Discuss this citing recent research. 16**
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**II Sem. M.Sc. (Audiology) Examination, May/June 2005
Psychophysics of Audition in Normals**

Time; 3 Hours

Max. Marks: 80

Instruction: Attempt all questions.

- I. 1) a) Highlight the importance of pinna in sound localization, 6**
b) Discuss the cues for localization. 10

OR

- 2. a) Differentiate between adaptation and fatigue. 8**
b) Describe the neurophysiological process underlying adaptation. 8
- 11.3. a) Define the following: (2x4=8)**
i) Weber's Law
ii) Time-separation Pitch
iii) Precedence effect
iv) Time-intensity trading.
- b) Explain the following: (4x2=8)**
i) Two-Tone inhibition
b; ii) Matzker's model. 3/4

OR

- 4) a) What are loudness scales ? How are they utilized ? 8**
b) Explain the difference between loudness and loudness level. 8
- III. 5) a) Describe the stimulus parameters, and procedures that you would use to demonstrate**
i) Masking level difference. 8
ii) Remote Masking.

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- 6) Design two experiments to study the effects of temporal parameters on :**
i) Pitch perception 8
ii) Localization. 8

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- IV. 7) a) Define binaural hearing, and explain the phenomenon of binaural integration. 10**
- b) What are the clinical applications of binaural hearing ? 6**
- OR**
- 8) a) Discuss various cues for localization.;; 8**
- b) Compare localization and lateralization. 8**
- V. 9) Write short notes on :**
- i) Periodicity pitch 8**
- ii) Musical scales. 8**
- OR**
- 10) Write short notes on :**
- i) Theories of pitch perception. 8**
- ii) Factors affecting perception of music. 8**

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M.Sc. (II Semester) Examination, May/June 2005

(ISS Scheme)

Audiology

Speech Perception

Time: 3 Hours

Max. Marks: 80

Instruction: Answer all the questions.

1. a) 'Speech production and perception are two sides of the same coin'. Explain this in relation to motor theory of speech perception. 12
b) Write a note on CVE based approach to speech perception. 4
OR
2. a) Critically evaluate the research evidence against motor theory of speech perception. 8
b) 'Categorical perception is no more valid'. Comment and justify your answer. 8
3. a) Discuss the different conclusions that one can draw from studies comparing vowel and consonant perception. 10
b) Write a note on duplex perception. 6
4. a) Explain the problem of perceptual constancy. Relate it to talker variability and change in speaking rate. 10
b) Write a note on the perceptual cues for voicing in stops. 6
5. a) Explain, with a neat diagram, Kimura's effect and its application in speech language pathology. 10
b) Do vowels and consonants result in equal ear effects ? If not, what are the differences ?
OR
6. a) Briefly explain why there is a difference in speech perception between two ears ? 10
b) How is the processing of music different from that for speech ? 6

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7. a) What are the different theories of short term memory ? Explain in detail any one of them. **8**
- b) Can animals perceive speech sounds ? Substantiate your answer. .. **8**
8. a) Does the evidence suggest that non-human animals perceive speech sounds in a manner similar to that of humans ? **10**
- b) Write a note on the perception of consonants in relation to short-term memory. **6**
9. a) Explain the notion of visually reinforced infant speech discrimination. **8**
- b) 'Speech perception in infants is developmental'. Comment. **8**
- OR**
10. a) 'In what ways experience affect speech perception capacity ? **8**
- b) Write a detailed note on sensitivity to non-native contrasts in infants. **8**

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M.Sc. (II Semester) Examination, May/June 2005
(Semester Scheme)
Audiology
Physiological Assessment of the Auditory System

Time : 3 Hours

Max. Marks: 80

Instruction : Answer all the questions.

I.1) Write an essay on multifrequency tympanometry. 16

OR

2) Discuss the factors that affect low frequency and multifrequency tympanometry. 16

II. 3) a) Critically evaluate the usefulness of non-acoustic reflexe in the differential diagnosis of auditory disorders. 6

b) Discuss the different stimuli that are used for eliciting non-acoustic reflex. Enumerate on the merits and demerits of each of these stimuli. 10

OR

4) Discuss the effect of the following parameters on acoustic reflex thresholds : . . . (4x4)

a) Age of the subject

b) Probe tone frequency

c) Frequency of the reflex eliciting signal

d) Duration of the reflex eliciting signal.

III. 5) a) If you were procuring an immittance meter for an ENT setup, what features would you ask for in the instrument ? Justify your answer. 16

OR

6) Describe the test protocol you would choose for immittance evaluation of a one month old baby. Justify the choice of your protocol. 16

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IV. 7) a) Discuss the different classifications of OAEs. 8

b) "Recording of OAEs is a good hearing screening tool in infants". Discuss. 8

OR

8) Discuss the instrumentation used for recording different types of OAEs. 16

V. 9) Discuss the nonpathologic factors that affect DPOAE measures. 16

OR

10) a) A 10 year old girl with bilateral normal hearing has robust TEOAEs but there is no contralateral suppression. What is your interpretation of these results ? Justify your answer. 10

b) What are the nonpathologic factors that affect contralateral suppression of TEOAEs. 6