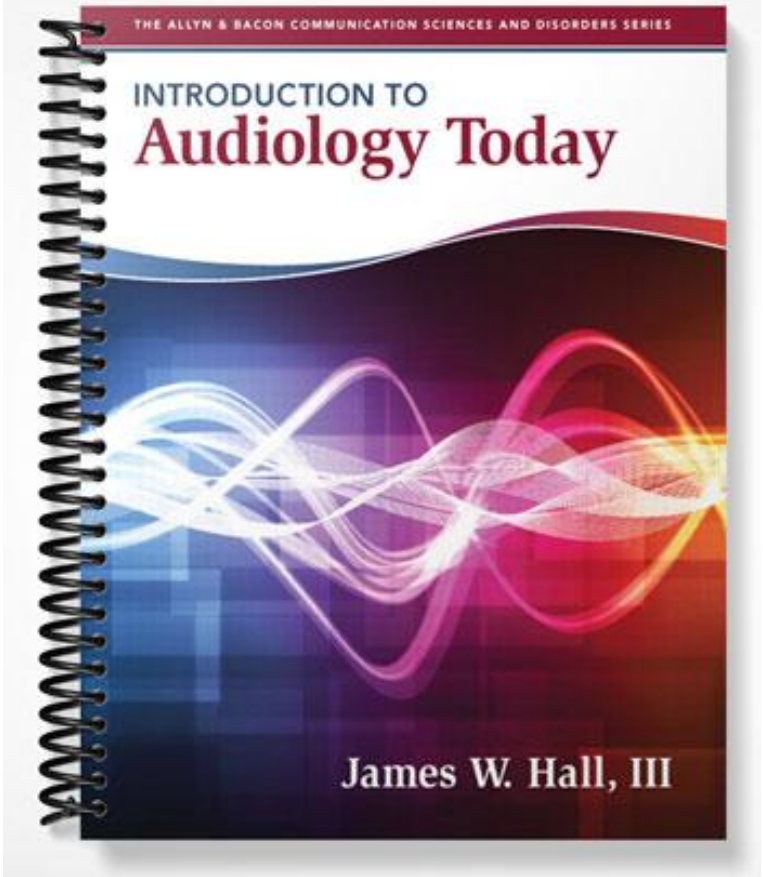
TEST BANK


THE ALLYN & BACON COMMUNICATION SCIENCES AND DISORDERS SERIES
INTRODUCTION TO
Audiology Today
James W. Hall, III

Test Bank

for

Hall

Introduction to Audiology Today

First Edition

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ISBN-10: 0205569293

www.pearsonhighered.com

ISBN-13: 9780205569298

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Chapter 1

Fill in the Blank

1. Audiologists are responsible for caring for persons with _____.
2. _____ is considered to be the Father of Audiology.
3. Over the age of 75 years, the proportion of adults with hearing loss is approximately _____.
4. Up to _____in 1000 children is born with some degree of hearing impairment.
5. The medical specialty that treats diseases of the ear is called _____.
6. In the United States, audiometers started being used in clinical hearing assessment during the 19___s.
7. The first academic program in audiology was established by Raymond Carhart at _____ University.
8. One of the first hearing research centers in the United States was _____ at Harvard University.
9. Harvey Fletcher worked at the _____ Laboratories.
10. An audiologist and mentee of Raymond Carhart who is particularly well-known for developing clinical diagnostic hearing tests is _____.
11. Audiologists started becoming involved in the fitting and dispensing of hearing aids in the 19___s.
12. A professional who has expertise in providing patient services along with research education and experience is termed a _____.
13. Audiologists who choose to work with manufacturers of hearing aids and related equipment are called _____ audiologists.

True or False:

14. Audiologists are non-physician healthcare professionals who treat hearing loss with techniques other than medicine or surgery.

Multiple Choice

15. Which of the following is a true specialty area in audiology
    a. Pediatric audiology
    b. Hearing testing
    c. Working in a medical clinic

d. PhD audiology

16. The description of activities that can be included in clinical practice is known as the
    a. Code of Ethics
    b. Licensure Board
    c. American Board of Audiology
    d. Scope of Practice
17. Which organization, in 1988, was formed "of, by, and for audiologists"?
    a. American Speech-Language-Hearing Association
    b. American Otology Association
    c. American Academy of Audiology
    d. Ear Institute
18. According to the American Academy of Audiology 2011 Compensation and Benefits Report, which setting employs the highest percentage of audiologists?
    a. Veterans Administration
    b. Otolaryngology practice
    c. Private practice
    d. University hospital

Short Answer

19. During which historical event was audiology conceived as a profession?
20. Who won the Nobel Prize in Physiology or Medicine for his work on the physiology of the ear?
21. Which audiologist whose work has focused on newborn and pediatric hearing is also called the Mother of Audiology?
22. What is the current entry-level degree for the practice of audiology?
23. When was the AuD first introduced?

Chapter 2

Fill in the Blank

24. Sound is produced by the _____of objects.
25. _____ and _____ are two properties that are essential for vibration.
26. The repeated back and forth movement of a vibrating object is called _____ motion.
27. The time taken to complete one full cycle of movement is called _____.
28. The displacement of a vibrating object at any given instant of time is called _____.
29. RMS stands for _____.
30. The typical medium for sound that audiologists deal with is _____.
31. A sound with a single frequency of vibration is called a _____.
32. Sine waves are also called _____.
33. The maximum displacement of a wave is called _____
34. The amount of force exerted on a specific area is called _____.
35. The minimum amount of force that can be detected by a healthy human ear is _____ dynes/cm^2 or _____ µPa.
36. The complete formula to calculate dB IL is _____.
37. The complete formula to calculate dB SPL is _____.
38. The duration of sound consists of _____, _____, _____, _____, and _____.
39. The subjective perception of the frequency of sound is called its _____.
40. The frequency content of a sound is represented in its _____.
41. A measure of the discrimination between two sounds is the _____.
42. The subjective attribute of intensity is called _____.
43. The units of pitch and loudness are _____ and _____, respectively.
44. The detection of a sound is influenced by its duration. This is referred to as _____.
45. The faintest intensity level that can be detected is termed _____.
46. Minimum auditory field (MAF) and minimum auditory pressure (MAP) are measured using _____ and _____, respectively.
47. The abbreviation RETSPL stands for _____.

48. The three factors that influence the speed of sound are _____, _____, and _____.
49. The speed of sound in air is _____ m/s.
50. A sound with more than one frequency in it is called _____.
51. Sounds with very short durations are termed _____.
52. The human voice can be characterized in terms of its _____ and higher frequencies called _____.

True or False

53. The decibel called be described as a relative, logarithmic unit involving the ratio of a given pressure or power to a reference pressure or power.
54. The units dB SPL, dB SL, and dB HL can all be interchangeably used.
55. Loudness and intensity can be used interchangeably with each other.
56. RETSPLS are the same regardless of the transducer used to measure them.
57. Sound intensity is indirectly proportional to the distance between the receiver and the source of sound.
58. Constructive and destructive interference can change the intensity of sound.

Multiple Choice

59. Which of the following statements is true?
    a. Sound can travel in any medium as long as the medium contains particles.
    b. Sound can travel only in air.
    c. Sound cannot travel in water.
    d. Sound can travel in a vacuum (a space where there are no particles.)
60. Which of the following property-unit pair is *appropriately* matched?
    a. Wavelength- Hertz
    b. Frequency – Second
    c. Speed of sound – Meters/second
    d. Time period – cps
61. The tendency of a body to maintain a state of rest or uniform motion unless acted upon by an external force is called
    a. Vibration
    b. Elasticity

c. Inertia

d. Damping

62. The wavelength of a sound wave is defined as the distance between

a. Two successive condensations only

b. Two successive rarefactions only

c. Two successive rarefactions *or* condensations

d. One rarefaction and the next condensation

63. The gradual decrease in the amplitude of vibration over time is called

a. Inertia

b. Resistance

c. Damping

d. Resistance

64. What is the wavelength of a sound with a frequency of 10 Hz?

a. 345 m

b. 3.45 m

c. 34.5 m

d. 10 m

65. Which of the following is related to the amplitude of vibration

a. Intensity

b. Wavelength

c. Frequency

d. Phase

66. Psychoacoustics is the branch of science that deals with the

a. Relation between the anatomy and the physiology of the auditory system

b. Relation between the anatomy of the auditory system and the physical aspects of sound

c. Relation between the physical aspects of sound and the physiology of the auditory system

d. Relation between the physical aspects of sound and the perception of sound

67. An area with a high concentration of air particles is called

a. Condensation

b. Rarefaction

c. Vacuum

d. Anechoic chamber

68. Jane's threshold for a 2000 Hz pure tone is 40 dB SPL. What is the sensation level for a 2000 Hz presented to Jane at 50 dB SPL?

a. 50 dB SPL

b. 40 dB IL

c. 90 dB HL

d. 10 dB SL

Short Answer

69. Name the three dimensions shown in a spectrogram.

70. List three different sounds that are used by audiologist in their daily practice.

71. List three properties of sound that are manipulated by audiologists.

72. Name three noises used by audiologists in their daily practice.

73. What is the relation between time period and frequency?

74. How are frequency and wavelength related?

75. What is the rationale behind the dB as a unit of sound intensity?

76. Define dB SL.

77. Define dB HL

TEST BANK ANSWER KEY

Chapter 1

1. Hearing loss and related disorders
2. Raymond Carhart
3. One half (50%)
4. Six
5. Otology/Otolaryngology
6. 1920s
7. Northwestern
8. Psychoacoustic Laboratories (PAL)
9. Bell
10. James Jerger
11. 1970s
12. Clinical scholar
13. Industrial
14. True
15. a, Pediatric audiology
16. d, Scope of practice
17. c, American Academy of Audiology
18. b, Otolaryngology practice
19. World war II
20. Georg von Bekesy
21. Marion Downs
22. Doctor of Audiology (AuD)
23. In the 1990s

Chapter 2

24. Vibration
25. Inertia and elasticity
26. Simple harmonic motion
27. Time period
28. Instantaneous displacement
29. Root mean square
30. Air
31. Sine wave
32. Pure tones
33. Peak amplitude
34. Pressure
35. 0.0002, 20
36. 10 log (I_2/I_R)
37. 20 log (P_2/P_R)
38. Onset, rise time, plateau, fall time, offset
39. Pitch
40. Spectrum
41. Just noticeable difference (JND)
42. Loudness
43. Mel, phon
44. Temporal integration
45. Threshold of audibility
46. Loudspeakers, earphones
47. Reference equivalent threshold sound pressure level
48. Temperature, humidity, barometric pressure
49. 345
50. Complex sound
51. Transients
52. Fundamental frequency, formants

53. True
54. False
55. False
56. False
57. True
58. True
59. a, Sound can travel in any medium as long as the medium contains particles
60. c, Speed of sound – Meters/second
61. b, Inertia
62. c, Two successive rarefactions *or* condensations
63. c, damping
64. c, 34.5 m
65. a, intensity
66. d, Relation between the physical aspects of sound and the perception of sound
67. a, Condensation
68. d, 10 dB SL
69. Frequency (vertical axis), time (horizontal axis), and intensity (degree of shading)
70. Sine waves/pure tones, speech, and noise
71. Intensity, frequency, duration
72. Broadband noise, narrow band noise, speech spectrum noise
73. Frequency = 1/Time period. Frequency is the number of cycles in one second, while time period is the time taken to complete one cycle. They are inversely proportional to each other.
74. Wavelength = Speed of sound/Frequency
75. The human ear is capable of responding to a huge range of sounds ranging from very soft to painful, when expressed in absolute units such as w/m^2 and µPa. In order to compress these numbers into a range that is more practical for clinical use, the logarithm is applied to a ratio of the measured sound power or pressure to a known reference. This unit is called decibel.
76. The unit dB SL stands for decibel sensation level. It is defined as the level of sound that is above the threshold of audibility or detection. For example, if a person's threshold of

detection for a sound is 10 dB SPL, and the same sound is presented now at 65 dB SPL, the sensation level would be 65 -10 = 55 dB SL.

77. The unit dB HL stands for decibel hearing level. 0 dB HL is defined as the lowest intensity that a normal hearing person can hear (at any frequency). dB HL can be converted to the corresponding dB SPL using the appropriate RETSPL value. For example, 0 dB HL at 1000 Hz corresponds to 7.5 dB SPL (0 +7.5) when measured using TDH earphones.