

The *Praxis*®
Study Companion

Audiology (5342)



Welcome to *The Praxis*® Study Companion

Prepare to Show What You Know

You have been working to acquire the knowledge and skills you need for your teaching career. Now you are ready to demonstrate your abilities by taking a *Praxis*® test.

Using the *Praxis*® Study Companion is a smart way to prepare for the test so you can do your best on test day. This guide can help keep you on track and make the most efficient use of your study time.

The Study Companion contains practical information and helpful tools, including:

- An overview of the *Praxis* tests
- Specific information on the *Praxis* test you are taking
- A template study plan
- Study topics
- Practice questions and explanations of correct answers
- Test-taking tips and strategies
- Frequently asked questions
- Links to more detailed information

So where should you start? Begin by reviewing this guide in its entirety and note those sections that you need to revisit. Then you can create your own personalized study plan and schedule based on your individual needs and how much time you have before test day.

Keep in mind that study habits are individual. There are many different ways to successfully prepare for your test. Some people study better on their own, while others prefer a group dynamic. You may have more energy early in the day, but another test taker may concentrate better in the evening. So use this guide to develop the approach that works best for you.

Your teaching career begins with preparation. Good luck!

Know What to Expect

Which tests should I take?

Each state or agency that uses the *Praxis* tests sets its own requirements for which test or tests you must take for the teaching area you wish to pursue.

Before you register for a test, confirm your state or agency's testing requirements at www.ets.org/praxis/states.

How are the *Praxis* tests given?

Praxis tests are given on computer. Other formats are available for test takers approved for accommodations (see page 45).

What should I expect when taking the test on computer?

When taking the test on computer, you can expect to be asked to provide proper identification at the test center. Once admitted, you will be given the opportunity to learn how the computer interface works (how to answer questions, how to skip questions, how to go back to questions you skipped, etc.) before the testing time begins. Watch the [What to Expect on Test Day](#) video to see what the experience is like.

Where and when are the *Praxis* tests offered?

You can select the test center that is most convenient for you. The *Praxis* tests are administered through an international network of test centers, which includes Prometric® Testing Centers, some universities, and other locations throughout the world.

Testing schedules may differ, so see the *Praxis* web site for more detailed test registration information at www.ets.org/praxis/register.

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1. Learn About Your Test

Learn about the specific test you will be taking

Audiology (5342)

Test at a Glance			
Test Name	Audiology		
Test Code	5342		
Time	2 hours		
Number of Questions	120		
Format	Selected-response questions		
Test Delivery	Computer delivered		
	Content Categories	Approximate Number of Questions	Approximate Percentage of Examination
	I. Foundations II. Prevention and Identification III. Assessment IV. Intervention V. Professional Issues	12 12 48 36 12	10% 10% 40% 30% 10%

About This Test

The Audiology test measures knowledge important for independent practice as an audiologist in all primary employment settings, including schools, hospitals, clinics, private practice, etc. The examination is typically taken by examinees who are in or have completed a doctoral degree program that prepares individuals to enter professional practice. Recognized as the national examination in audiology, the test is one of several requirements for the Certificate of Clinical Competence issued by the American Speech-Language-Hearing Association (ASHA). Some states use the examination as part of the licensure procedure. Complete information is available about certification or licensure from the authority, state, or local agency from which certification or licensure is sought at ASHA: www.asha.org and 2200 Research Boulevard, Rockville, MD 20850.

The 120 selected-response test questions focus on content related to the major practice areas of prevention, identification, assessment, and intervention, together with foundational knowledge and knowledge of standards of professional practice. Application of knowledge is tested in the context of clinical case studies research results, and results of assessments (physiologic, behavioral, and other types of assessment). The content of the test is based on a practice and curriculum analysis commissioned by ASHA: a national survey of audiologists in both clinical and educational settings. This test may contain some questions that will not count toward your score.

Note: ETS recently changed the test code of the Praxis Audiology test to 0342/5342. While the content of the test has not changed, scores will now be reported on a 100-200 score scale in one-point increments. The required score for ASHA, the state boards of licensure, and departments of education on the new scale is 170 (equivalent to the required score of 600 on the former 250-990 scale). We recommend that students take the Audiology test during their final year of doctoral study. The exam is outcome-based and depends on the student being able to engage in clinical decision-making.

Test Specifications

Test specifications in this chapter describe the knowledge and skills measured by the test. Study topics to help you prepare to answer test questions can be found on page 33.

I. Foundations (10%)

A. Acoustics/psychoacoustics

1. basic parameters of sound
2. principles of acoustics as related to speech sounds
3. sound measurement
4. psychoacoustic principles, methods, and applications

B. Anatomy, physiology, and behavior over the life span

1. the auditory system
2. the balance system
3. neuroanatomy and neurophysiology
4. embryology and development of hearing and balance mechanisms
5. normal processes of auditory behavior over the life span
6. language and speech characteristics and their development over the life span
7. effects of hearing loss on language and speech, and on educational, vocational, social, and psychological functioning

C. Etiology

1. Genetics and associated syndromes related to hearing and balance
2. Pathologies related to hearing and balance and their medical diagnosis and treatment
3. Pharmacology, ototoxicity, and vestibulotoxicity

D. Psychometrics and Instrumentation

1. Test construction principles
2. Test reliability and validity
3. Calibration of audiometric equipment

E. Principles of counseling

F. Cultural and linguistic diversity, including Deaf Culture

II. Prevention and Identification (10%)

A. Education and Prevention (Conservation)

1. Informing clients about
 - a. causes and effects of hearing loss (congenital and acquired)
 - b. causes and effects of vestibular disorders
 - c. protection from hearing loss and vestibular disorders
2. Universal precautions, including infection control and bioelectrical hazards
3. Selecting and fitting hearing protection devices (HPDs)

B. Screening and Risk Assessment

1. Selecting and administering procedures to identify individuals who require
 - a. further audiologic evaluation and/or treatment
 - b. referral for speech and/or language assessment
 - c. referral for other professional services
2. Identifying individuals at risk for balance problems and falls who require further vestibular evaluation and/or treatment
3. Newborn hearing screening programs (early hearing detection and intervention [EHDII])
4. Selecting, administering, and interpreting self-report measures of hearing problems

III. Assessment (40%)

A. Assessment Planning

1. Gathering and evaluating client information (case histories and information from referral sources) to facilitate assessment planning and identify potential etiologic factors
2. Verifying proper functioning of assessment equipment
3. Selecting and modifying procedures based on client factors; e.g., age, developmental level, functional status, behavior, cultural and linguistic diversity, physical, sensory, and cognitive abilities

B. Audiologic Evaluation – Behavioral

Administering and interpreting

1. Pure-tone air and bone conduction testing
2. Speech audiometry
3. Tests for functional hearing loss
4. Tests for children above 6 months developmental age; e.g., visual reinforcement audiometry and conditioned-play audiometry

C. Audiologic Evaluation – Physiologic

Administering and interpreting

1. Immittance: tympanometry
2. Immittance: acoustic reflex testing
3. Immittance: otoacoustic emission testing
4. Immittance: other
5. AEP: auditory brainstem response (ABR) threshold testing
6. AEP: ABR for neurodiagnostic evaluation
7. AEP: auditory steady state
8. AEP: other

D. Other Assessments and Evaluations

Administering and interpreting

1. Otoscopy: performing otoscopy and ensuring appropriate follow-up, including diagnostic evaluations, intervention, and referrals
2. Self-report measures of hearing problems and their impact on daily living
3. Balance system assessment; e.g.,
 - a. videonystagmography (VNG)
 - b. electronystagmography (ENG)
 - c. rotational tests
4. Assessment of communication function; e.g.,
 - a. speech in noise testing
 - b. spatial testing
 - c. self-report measures

5. Assessment of tinnitus; e.g.,
 - a. pitch matching
 - b. loudness matching
 - c. self-report measures
6. Evaluating (central) auditory processes; e.g.,
 - a. gap detection
 - b. dichotic digits
 - c. filtered speech

E. Integrating Assessment Results

1. Integrating assessments (behavioral, physiologic, neurodiagnostic, and other evaluations)
 - a. to establish type and severity of hearing loss
 - b. to support recommendations for further evaluation and/or referral
2. Integrating balance function tests (e.g., VNG) with other results to evaluate balance function

F. Documentation and Communication

1. Documenting the procedures and results of evaluations
2. Generating recommendations based on evaluations, including referrals, as appropriate, to other audiologists and related professionals
3. Communicating results and recommendations to relevant individuals (e.g., clients, caregivers, physicians, agencies) to coordinate a plan of action

Interacting effectively with clients, families, other appropriate individuals, and professionals including working with interpreters (ASL and other languages, sign systems) to effectively communicate with clients

IV. Intervention (30%)

A. Treatment Planning

1. Evaluating client information to facilitate treatment planning:
 - a. information from referral sources
 - b. case histories
2. Selecting and modifying treatment procedures based on client factors; e.g., age, developmental level, functional status, behavior, cultural and linguistic diversity, physical, sensory, and cognitive abilities
3. Integrating results of assessments and other evaluations to support recommendations for treatment and/or referral

B. Device Selection

1. Evaluating client's perceived hearing handicap and expectations related to hearing devices
2. Determining candidacy for and selecting:
 - a. hearing aids
 - b. other assistive listening and alerting devices
 - c. cochlear implant(s)
 - d. other implantable devices (e.g., bone-anchored hearing aids)
3. Determining candidacy for and selecting:
 - a. hearing assistive technology system (HATS) for adults; e.g., personal and group amplification systems, assistive listening, and alerting devices
 - b. hearing assistive technology system (HATS) for children

C. Hearing Aids

1. Evaluating, for the purpose of hearing aid selection
 - a. speech recognition in noise
 - b. loudness discomfort
2. Programming hearing aids
3. Hearing aid coupling; e.g., ear mold modifications, sound bore length, materials
4. Selecting features and processing strategies based on client communication needs; e.g.,
5. type of amplitude processing
6. feedback suppression
7. direct audio input

D. Cochlear Implants

1. Programming cochlear implants
2. Evaluating implant effectiveness and making appropriate modifications
3. Selecting processing and programming strategies based on client communication needs

E. Device Verification and Validation

1. Verifying proper functioning of hearing aids and other assistive devices
2. Conducting quality control measures (e.g., electroacoustic measures, feature-specific probe microphone measures) on hearing technology
3. Probe microphone verification for children; e.g., real ear to coupler difference (RECD) aided thresholds
4. Probe microphone verification for adults; e.g.,
 - a. real ear insertion gain (REIG)
 - b. real ear aided response (REAR)
 - c. real ear saturation response (RESR)
5. Evaluating hearing technology effectiveness; e.g., outcome measures, aided speech recognition
6. Repairing and modifying hearing technology devices, when appropriate

F. Audiologic (Re)habilitation/Intervention

1. Evaluating and modifying audiologic (re)habilitation, including therapy schedule, discharge criteria, frequency, duration, and type of service
2. Teaching communication strategies to clients and their significant others; e.g.,
 - a. speech reading
 - b. conversational repair strategies
3. Facilitating communication development and/or auditory learning (listening, speech, expressive, and receptive language)
4. Providing support for school-age children; e.g.,
 - a. counseling
 - b. addressing the acoustic environment
 - c. consulting with educational personnel
 - d. providing direct therapy

G. Tinnitus Management

1. Counseling and sound management intervention (e.g., environmental sound sources, ear level sound generators) and follow-up

H. Vestibular Rehabilitation

1. Treatment for benign paroxysmal positional vertigo (BPPV)

I. Counseling

1. Counseling related to device use and safety
2. Counseling children's caregivers about hearing loss, communication development, and modes of communication
3. Providing individual, family, and group counseling related to hearing loss and subsequent communication and areas of psychosocial, behavioral, vocational, and educational adjustment
4. Making referrals, as appropriate, to other audiologists and related professionals

J. Documentation and Communication

1. Documentation of intervention processes and results
2. Generating recommendations resulting from intervention processes
3. Communication of recommendations to relevant individuals (e.g., clients, caregivers, physicians, agencies) to coordinate a plan of action

Interacting effectively with clients, families, other appropriate individuals, and professionals including working with interpreters (ASL and other languages, sign systems) to effectively communicate with clients about treatment

V. Professional Issues (10%)

A. Professional Practice

1. Different service delivery models in health care and school-based settings
2. Management and business practices; e.g.,
 - a. coding and reimbursement
 - b. case management
3. Effective and appropriate communication of results, recommendations, and intervention status
 - a. selecting the means of communication; e.g., formal reports, notes, emails, phone calls
 - b. using language appropriate for the recipient
 - c. maintaining client/patient privacy
4. Equipment calibration and maintenance to standards and manufacturer's specifications

B. Legal and Ethical Practice and Advocacy

1. Standards for professional conduct
2. Protection of clients'/patients' rights
3. Legislative and regulatory mandates
4. Advocacy for appropriate services
 - a. underserved populations
 - b. inclusion of services in individualized education programs (IEPs)
 - c. insurance appeals

C. Evidence-Based Practice

1. Application of research findings to maintain currency in care
2. Research principles and practices; e.g., experimental design, statistical methods, and application to clinical populations

2. Familiarize Yourself with Test Questions

Become comfortable with the types of questions you'll find on the Praxis tests

The *Praxis* assessments include a variety of question types: constructed response (for which you write a response of your own); selected response, for which you select one or more answers from a list of choices or make another kind of selection (e.g., by clicking on a sentence in a text or by clicking on part of a graphic); and numeric entry, for which you enter a numeric value in an answer field. You may be familiar with these question formats from taking other standardized tests. If not, familiarize yourself with them so you don't spend time during the test figuring out how to answer them.

Understanding Computer-Delivered Questions

Questions on computer-delivered tests are interactive in the sense that you answer by selecting an option or entering text on the screen. If you see a format you are not familiar with, read the directions carefully. The directions always give clear instructions on how you are expected to respond.

For most questions, you respond by clicking an oval to select a single answer from a list of answer choices.

However, interactive question types may also ask you to respond by:

- **Clicking more than one oval** to select answers from a list of answers.
- **Typing in an entry box.** When the answer is a number, you may be asked to enter a numerical answer. Some questions may have more than one place to enter a response.
- **Clicking check boxes.** You may be asked to click check boxes instead of an oval when more than one choice within a set of answers can be selected.
- **Clicking parts of a graphic.** In some questions, you will select your answers by clicking on a location (or locations) on a graphic such as a map or chart, as opposed to choosing your answer from a list.
- **Clicking on sentences.** In questions with reading passages, you may be asked to choose your answers by clicking on a sentence (or sentences) within the reading passage.
- **Dragging and dropping answer choices into targets on the screen.** You may be asked to select answers from a list of answers and drag your answers to the appropriate location in a table, paragraph of text or graphic.
- **Selecting options from a drop-down menu.** You may be asked to choose answers by selecting answers from a drop-down menu (e.g., to complete a sentence).

Remember that with every question you will get clear instructions.

Perhaps the best way to understand computer-delivered questions is to view the [Computer-delivered Testing Demonstration](#) on the Praxis web site to learn how a computer-delivered test works and see examples of some types of questions you may encounter.

Understanding Selected-Response Questions

Many selected-response questions begin with the phrase “which of the following.” Take a look at this example:

Which of the following is a flavor made from beans?

- (A) Strawberry
- (B) Cherry
- (C) Vanilla
- (D) Mint

How would you answer this question?

All of the answer choices are flavors. Your job is to decide which of the flavors is the one made from beans.

Try following these steps to select the correct answer.

- 1) **Limit your answer to the choices given.** You may know that chocolate and coffee are also flavors made from beans, but they are not listed. Rather than thinking of other possible answers, focus only on the choices given (“which of the following”).
- 2) **Eliminate incorrect answers.** You may know that strawberry and cherry flavors are made from fruit and that mint flavor is made from a plant. That leaves vanilla as the only possible answer.
- 3) **Verify your answer.** You can substitute “vanilla” for the phrase “which of the following” and turn the question into this statement: “Vanilla is a flavor made from beans.” This will help you be sure that your answer is correct. If you’re still uncertain, try substituting the other choices to see if they make sense. You may want to use this technique as you answer selected-response questions on the practice tests.

Try a more challenging example

The vanilla bean question is pretty straightforward, but you’ll find that more challenging questions have a similar structure. For example:

Entries in outlines are generally arranged according to which of the following relationships of ideas?

- (A) Literal and inferential
- (B) Concrete and abstract
- (C) Linear and recursive
- (D) Main and subordinate

You’ll notice that this example also contains the phrase “which of the following.” This phrase helps you determine that your answer will be a “relationship of ideas” from the choices provided. You are supposed to find the choice that describes how entries, or ideas, in outlines are related.

Sometimes it helps to put the question in your own words. Here, you could paraphrase the question in this way: “How are outlines usually organized?” Since the ideas in outlines usually appear as main ideas and subordinate ideas, the answer is (D).

QUICK TIP: Don't be intimidated by words you may not understand. It might be easy to be thrown by words like "recursive" or "inferential." Read carefully to understand the question and look for an answer that fits. An outline is something you are probably familiar with and expect to teach to your students. So slow down, and use what you know.

Watch out for selected-response questions containing "NOT," "LEAST," and "EXCEPT"

This type of question asks you to select the choice that does not fit. You must be very careful because it is easy to forget that you are selecting the negative. This question type is used in situations in which there are several good solutions or ways to approach something, but also a clearly wrong way.

How to approach questions about graphs, tables, or reading passages

When answering questions about graphs, tables, or reading passages, provide only the information that the questions ask for. In the case of a map or graph, you might want to read the questions first, and then look at the map or graph. In the case of a long reading passage, you might want to go ahead and read the passage first, noting places you think are important, and then answer the questions. Again, the important thing is to be sure you answer the questions as they refer to the material presented. So read the questions carefully.

How to approach unfamiliar formats

New question formats are developed from time to time to find new ways of assessing knowledge. Tests may include audio and video components, such as a movie clip or animation, instead of a map or reading passage. Other tests may allow you to zoom in on details in a graphic or picture.

Tests may also include interactive questions. These questions take advantage of technology to assess knowledge and skills in ways that standard selected-response questions cannot. If you see a format you are not familiar with, **read the directions carefully**. The directions always give clear instructions on how you are expected to respond.

QUICK TIP: Don't make the questions more difficult than they are. Don't read for hidden meanings or tricks. There are no trick questions on *Praxis* tests. They are intended to be serious, straightforward tests of your knowledge.

Understanding Constructed-Response Questions

Constructed-response questions require you to demonstrate your knowledge in a subject area by creating your own response to particular topics. Essays and short-answer questions are types of constructed-response questions.

For example, an essay question might present you with a topic and ask you to discuss the extent to which you agree or disagree with the opinion stated. You must support your position with specific reasons and examples from your own experience, observations, or reading.

Take a look at a few sample essay topics:

- "Celebrities have a tremendous influence on the young, and for that reason, they have a responsibility to act as role models."
- "We are constantly bombarded by advertisements—on television and radio, in newspapers and magazines, on highway signs, and the sides of buses. They have become too pervasive. It's time to put limits on advertising."
- "Advances in computer technology have made the classroom unnecessary, since students and teachers are able to communicate with one another from computer terminals at home or at work."

Keep these things in mind when you respond to a constructed-response question

- 1) **Answer the question accurately.** Analyze what each part of the question is asking you to do. If the question asks you to describe or discuss, you should provide more than just a list.
- 2) **Answer the question completely.** If a question asks you to do three distinct things in your response, you should cover all three things for the best score. Otherwise, no matter how well you write, you will not be awarded full credit.
- 3) **Answer the question that is asked.** Do not change the question or challenge the basis of the question. You will receive no credit or a low score if you answer another question or if you state, for example, that there is no possible answer.
- 4) **Give a thorough and detailed response.** You must demonstrate that you have a thorough understanding of the subject matter. However, your response should be straightforward and not filled with unnecessary information.
- 5) **Reread your response.** Check that you have written what you thought you wrote. Be sure not to leave sentences unfinished or omit clarifying information.

QUICK TIP: You may find that it helps to take notes on scratch paper so that you don't miss any details. Then you'll be sure to have all the information you need to answer the question.

3. Practice with Sample Test Questions

Answer practice questions and find explanations for correct answers

Computer Delivery

This test is available via computer delivery. To illustrate what the computer-delivered test looks like, the following sample question shows an actual screen used in a computer-delivered test. For the purposes of this guide, sample questions are provided as they would appear in a paper-delivered test.

The screenshot displays a test interface with a dark header bar. On the left is the ETS PRAXIS logo. On the right are five buttons: 'Mark' (with a square icon), 'Review' (with a bookmark icon), 'Help' (with a question mark icon), 'Back' (with a left arrow icon), and 'Next' (with a right arrow icon). Below the header, a light green bar shows 'Science CKT | Question 33 of 47' on the left and '00:59:26 Hide Time' on the right. The main content area is white and contains a question: 'What quantity of oxygen, O₂, contains very nearly the same number of molecules as 36.0 grams of water, H₂O?'. Below the question are four radio button options: '64.0 grams', '32.0 grams', '16.0 grams', and '8.0 grams'. A grey instruction box at the bottom of the question area reads: 'Answer the question above by clicking on the correct response.'

ETS PRAXIS

Mark Review Help Back Next

Science CKT | Question 33 of 47 00:59:26 Hide Time

What quantity of oxygen, O₂, contains very nearly the same number of molecules as 36.0 grams of water, H₂O?

64.0 grams

32.0 grams

16.0 grams

8.0 grams

Answer the question above by clicking on the correct response.

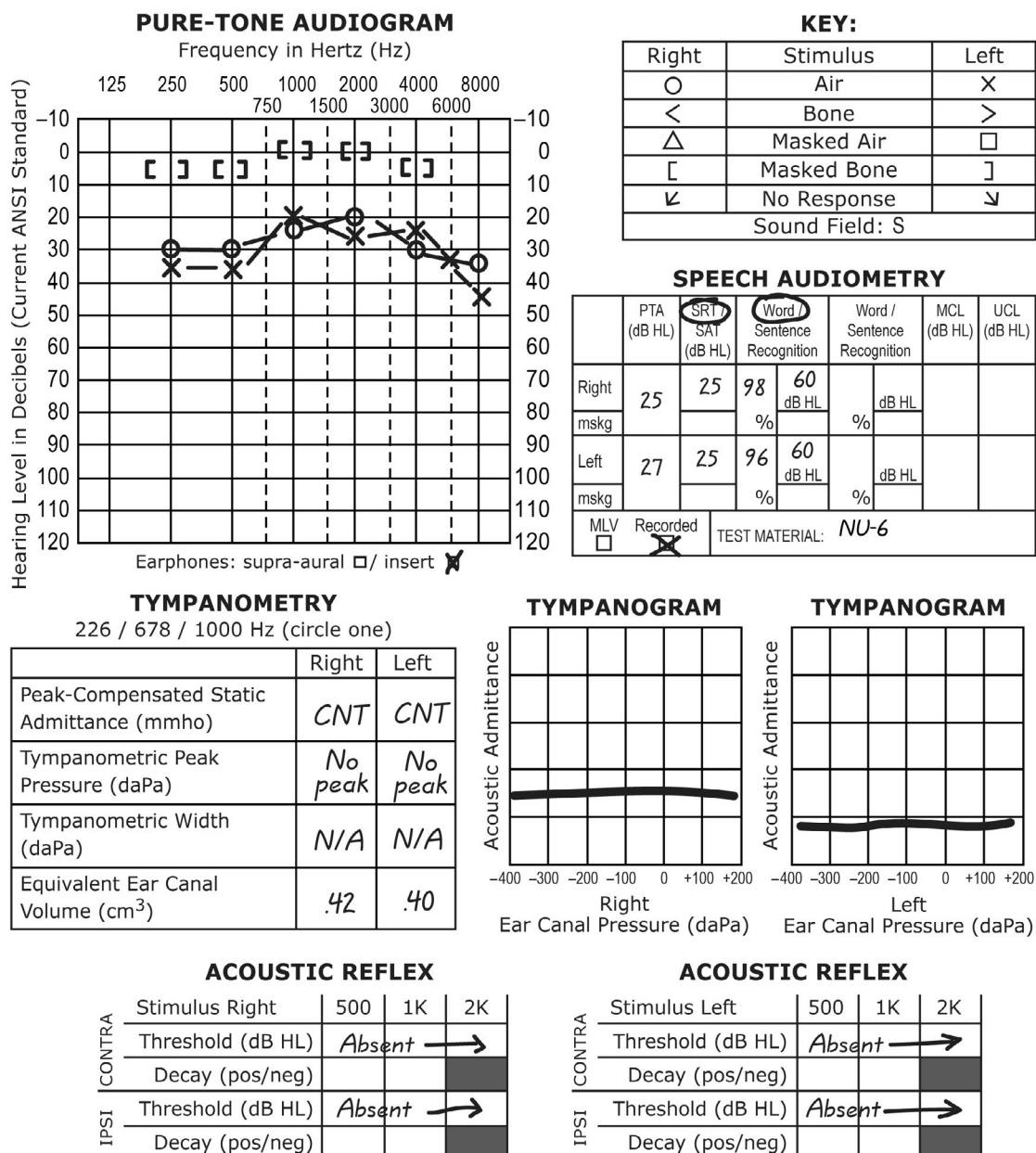
Sample Test Questions

The sample questions that follow illustrate the kinds of questions on the test. They are not, however, representative of the entire scope of the test in either content or difficulty. Answers with explanations follow the questions.

Directions: Each of the questions or incomplete statements that follow are followed by five suggested answers or completions. Select the one that is best in each case.

Questions 1–4 are based on the following case.

Kim is a six-year-old girl whose parents brought her to the audiology clinic because she has been having academic trouble in school. According to her classroom teacher, Kim has difficulty following directions. She appears to stare blankly when the teacher is speaking to the class and never answers questions. Kim reportedly has had three sinus infections in the past eight months that have been treated by her pediatrician. She is scheduled to see an allergist next month. Audiometric data for Kim is shown on the data sheet below.



1. Based on the audiometric and case history information provided, which of the following is the most likely etiology for Kim's hearing loss?
 - (A) Otosclerosis
 - (B) Otitis media
 - (C) Bilateral atresia
 - (D) Impacted cerumen
 - (E) Perforated tympanic membrane
2. Which of the following scores are mostly likely to be obtained if word recognition is assessed using an age-appropriate test at 40 dB SL?
 - (A) 70% right ear, 66% left ear
 - (B) 60% right ear, 80% left ear
 - (C) 80% right ear, 72% left ear
 - (D) 88% right ear, 90% left ear
 - (E) 100% right ear, 70% left ear
3. To accommodate Kim's needs, the audiologist would most appropriately recommend which of the following?
 - (A) Binaural bone-anchored hearing aids
 - (B) A mild gain hearing aid for use in the classroom
 - (C) Individual tutoring outside the classroom for three hours/day
 - (D) Referral to an otolaryngologist for a cochlear-implant evaluation
 - (E) Preferential classroom seating and regular monitoring of middle-ear status
4. According to IDEA, the audiologist's recommendations for this child should be addressed in which of the following documents?
 - (A) Individualized Family Service Plan
 - (B) Individualized Education Program
 - (C) Report card
 - (D) Behavioral Intervention Plan
 - (E) Cumulative academic record
5. A six-month-old child born with bilateral bony atresia is seen for an audiological evaluation and treatment recommendation. Radiological evidence indicates the probable presence of an intact middle ear and cochlea. ABR responses have been obtained at near-normal levels to bone-conducted signals. Of the following, the most appropriate course of action for this child at this time would be to
 - (A) defer treatment until growth of the external and middle ear is complete at about age six
 - (B) suggest that surgery be initiated on at least one ear to permit a normal air-conducted pathway
 - (C) recommend an implanted bone-anchored hearing aid
 - (D) investigate the use of a bone-conduction hearing aid until audiological test results can be confirmed and surgery initiated when the child is older
 - (E) counsel the parents concerning sign language and initiate a treatment program based on the use of all visual cues
6. Which of the following statements about a caloric response yielding a left unilateral weakness in the interpretation of videonystagmography results is most accurate?
 - (A) It suggests a right peripheral vestibular disorder of the labyrinth.
 - (B) It is of no real value in the interpretation.
 - (C) It suggests a nonspecific (nonlocalizing) vestibular disorder.
 - (D) It suggests a left peripheral vestibular disorder of either the labyrinthine or the VIIIth nerve.
 - (E) It suggests a central vestibular disorder.

7. The accuracy of a hearing screening test in correctly identifying those individuals who actually have a hearing disorder is referred to as the screening test's
- (A) reliability
 - (B) validity
 - (C) precision
 - (D) specificity
 - (E) sensitivity
8. Carol is a 34-year-old woman with a sudden-onset, left-sided facial paralysis that has been diagnosed as Bell's palsy. Acoustic reflexes are present at normal levels bilaterally for both ipsilateral and contralateral stimulation. Which of the following statements accurately applies to this situation?
- (A) The pathology is proximal to the stapedial branch of the VIIIth nerve.
 - (B) The pathology is distal to the stapedial branch of the VIIIth nerve.
 - (C) The patient has a left acoustic neuroma.
 - (D) The facial paralysis is probably nonorganic in nature.
 - (E) No reliable statement can be made about VIIIth nerve function, since the responses could be due to Vth nerve activity.
9. Of the following, the most likely adult candidate for a cochlear implant is one with a
- (A) bilateral hearing loss due to chronic otitis media
 - (B) bilateral hearing loss due to noise exposure
 - (C) bilateral hearing loss due to adult meningitis
 - (D) unilateral hearing loss of sudden onset and unknown etiology
 - (E) unilateral hearing loss secondary to surgery for vestibular schwannoma
10. According to PL 99-457, a child under 2 years of age who has a hearing impairment must
- (A) be fitted with binaural hearing aids
 - (B) have biannual hearing evaluations
 - (C) be enrolled in a center-based habilitation program
 - (D) have a written individualized family service plan
 - (E) be provided with total communication training
11. Which of the following is typically the best choice of amplification for a person with bilateral moderate conductive hearing loss and chronic drainage from both ears?
- (A) Behind-the-ear aids with vented earmolds
 - (B) A body-worn hearing aid
 - (C) A vibrotactile aid
 - (D) A bone-conduction hearing aid
 - (E) A multichannel cochlear implant
12. In the measurement of real-ear sound-pressure levels with a probe-tube microphone system, insufficient probe-tube depth will tend to
- (A) increase the high-frequency response
 - (B) decrease the high-frequency response
 - (C) decrease the response at all frequencies
 - (D) decrease the low-frequency response
 - (E) increase the low-frequency response
13. The measurement of distortion product otoacoustic emission (DPOAE) involves the presentation of pairs of pure tones to the patient's ear. Which auditory response does this test measure?
- (A) Cubic difference tone
 - (B) Summation tone
 - (C) First and second harmonics
 - (D) Resonance in outer hair cells
 - (E) Resonance in inner hair cells

14. A client with a history of bilateral profound sensorineural hearing loss, lack of vestibular function, and progressive retinal deterioration is scheduled for an audiological assessment.

Which etiology is consistent with the client's history?

- (A) Auditory neuropathy
 - (B) Vestibular schwannomas
 - (C) Neurofibromatosis
 - (D) Usher's syndrome
 - (E) Meningitis
15. The area of the ear canal where most cerumen is generated is
- (A) at the isthmus
 - (B) at the eardrum
 - (C) the bony portion
 - (D) the middle third of the canal
 - (E) the outer third of the canal
16. A child comes to the clinic due to problems understanding the teacher at school. The child has a moderate hearing loss and wears bilateral hearing aids. Aided speech-recognition scores at 55 dB HL in quiet were 88 percent correct, with scores being 60 percent correct with a +5 SNR. Which of the following would be the best recommendation for the child?
- (A) Increase the gain of the hearing aid
 - (B) Utilize directional microphones with the hearing aids
 - (C) Utilize a personal frequency modulation (FM) system with the hearing aids
 - (D) Utilize a low-gain frequency modulation (FM) system with headphones
 - (E) Refer for a cochlear implant evaluation

17. Known types of presbycusis can be attributed to each of the following EXCEPT

- (A) degeneration of sensory hair cells
- (B) degeneration of auditory neurons
- (C) degeneration of the stria vascularis
- (D) degeneration of the ossicular joint
- (E) structural changes in the basilar membrane

18. Which of the following best identifies the appropriate tools to screen for newborn hearing loss in accordance with the Joint Committee on Infant Hearing Guidelines?

	In the well-baby nursery	In the neonatal intensive care unit
(A)	ABR	OAE
(B)	OAE	OAE and ABR
(C)	OAE and ABR	ABR
(D)	OAE, ABR, and ASSR	OAE and ABR
(E)	ABR	ABR and ASSR

19. In 2002, the American National Standards Institute (ANSI) adopted guidelines for classroom acoustics, intended for use in the design of new classrooms and in the renovation of existing classrooms. The ANSI-recommended average noise levels and reverberation times for unoccupied classrooms (< 10,000 cubic feet) are

- (A) 15 dBA or less and 0.2 seconds or less
- (B) 25 dBA or less and 2.0 seconds or less
- (C) 35 dBA or less and 0.6 seconds or less
- (D) 45 dBA or less and 2.0 seconds or less
- (E) 55 dBA or less and 0.2 seconds or less

Questions 20 and 21 refer to the following information.

A patient fitted with hearing aids for the first time returns for a two-week follow-up appointment. The patient reports feeling uncomfortable when doors slam.

20. Which of the following is the most likely cause for this complaint?
- The maximum power output (MPO) is set too high.
 - The dynamic range of the hearing aid is too narrow.
 - The patient is experiencing the occlusion effect.
 - The directivity index of the hearing aid is too low.
 - The attack and release times are too fast.
21. Which of the following strategies is most appropriate for addressing this complaint?
- Using expansion
 - Using frequency lowering
 - Decreasing the output compression threshold
 - Decreasing the input compression ratio
 - Increasing the input compression threshold
22. The audiometry room used for an occupational hearing conservation program is scheduled for renovation. The renovated room will have four ducts for ventilation. Each duct will have one fan, and all fans must be identical for effective ventilation. In order to obtain valid thresholds, the total noise of the fans must remain below 40 dBA. Assume that the noise from the duct fans radiates equally throughout the room. Which of the following represents the maximum noise level that can be emitted by each individual fan?
- 39 dBA
 - 34 dBA
 - 28 dBA
 - 20 dBA
 - 10 dBA
23. Which of the following symptoms is most indicative of superior semicircular canal dehiscence?
- Dizziness associated with loud sounds
 - Unilateral high-frequency tinnitus
 - Persistent feeling of spinning
 - Inability to walk in a straight line
 - Fluctuating low-frequency hearing loss
24. Which of the following assessments best determines the integrity of the inferior branch of the vestibular nerve?
- Bithermal calorics
 - Horizontal head shake test
 - Cervical vestibular evoked myogenic potential (cVEMP)
 - Ocular vestibular evoked myogenic potential (oVEMP)
 - Sinusoidal harmonic acceleration
25. A 38-year-old patient with a moderate mid-frequency hearing loss was fit with bilateral in-the-canal hearing aids. The patient complains of difficulty finding the person speaking when in a social or work situation where there are more than three or four people. Which of the following is most likely to be responsible for the patient's reported problem?
- Distorted pinna filtering
 - Absent ear-canal resonance
 - Inability to process spatial cues
 - Inability to divide attention
 - Decreased frequency selectivity
26. A person with a hearing loss who requires speech to be 12 dB higher than noise to achieve a 50% correct sentence-recognition score would have an SNR loss of
- 4 dB
 - 06 dB
 - 08 dB
 - 10 dB
 - 12 dB

27. Which of the following United States federal regulations defines the minimum hearing conservation standards for a noise-exposed worker?
- (A) Pub. No. 98-126 NIOSH
 - (B) OSHA 29 CFR 1910.95
 - (C) 30 CFR Part 62 MSHA
 - (D) 49 CFR 227 and 229 FRA
 - (E) ANSI S3.19
28. Auditory manifestations of a retrocochlear pathology at the first-order afferent nerve fibers typically include which of the following?
- (A) Pronounced acoustic reflex decay
 - (B) Reduced compliance
 - (C) Loudness recruitment
 - (D) Normal speech recognition in noise
 - (E) An audiometric configuration known as “cookie bite”
29. An audiologist is the first professional seen by a person who has experienced difficulty hearing in one ear for about two months. The audiologist finds the hearing impairment to be a mild-to-moderate sensorineural hearing loss. The word recognition score for recorded, full-list NU-6 monosyllabic words in quiet at 40 dB above the speech recognition threshold is 24% in that ear. Which of the following is the audiologist’s most appropriate next step?
- (A) Discussing the potential of CROS hearing aids and making an appointment for a hearing aid evaluation
 - (B) Scheduling another session for further audiometric tests
 - (C) Referring the person for a complete evaluation using electronystagmography (ENG)
 - (D) Referring the person for auditory steady state response (ASSR) testing
 - (E) Referring the person to a physician
30. The reliability of an obtained waveform on the auditory brainstem response is best checked by doing which of the following?
- (A) Obtaining another waveform under identical conditions
 - (B) Increasing the stimulation rate
 - (C) Opening the filters
 - (D) Using digital filters after completing the test
 - (E) Stimulating the opposite ear

Answers to Sample Questions

1. The correct answer is (B). According to the case history provided, the patient is a 6-year-old child who has experienced recurrent sinus infections and likely has allergies. Together with the audiometric data that reveal a bilateral hearing loss with air-bone gaps, flat tympanograms and absent acoustic reflexes suggest a conductive hearing loss. (A) is incorrect because the flat tympanograms rule out the possibility of otosclerosis. (C) is incorrect because the degree of hearing loss and the fact that tympanograms were obtained indicate that atresia is not present. (D) is incorrect because the degree of hearing loss cannot be accounted for by impacted cerumen. (E) is incorrect because the equivalent ear canal volume is too small to be associated with eardrum perforation. Thus, the only answer that fits with all of the audiometric results and the history is otitis media (B).

2. The correct answer is (D). The pure-tone air and bone conduction thresholds together with the immittance results indicate that this 6-year-old child has a purely conductive, bilateral hearing loss. Thus, it is expected that once speech is clearly audible to the child, word recognition ability will be good to excellent bilaterally. The only reasonable choice of word recognition scores is therefore 88% right ear, 90% left ear (D). (A), (B), (C), and (E) are incorrect because they include scores that are much too poor, either unilaterally or bilaterally.

3. The correct answer is (E). Providing her with preferential seating and monitoring her middle-ear status is clearly the most appropriate remediation strategy for the educational audiologist to recommend for Kim. (A) is incorrect because the history and audiometric results indicate bilateral otitis media, which can be treated medically; a bone-anchored hearing aid is not a reasonable choice for remediation. (B) is incorrect because a mild-gain hearing aid for classroom use is not warranted unless it is determined that medical treatment does not improve auditory acuity. (C) is incorrect because while tutoring may be beneficial if the child is having a problem with a specific subject, Kim should remain in the classroom for as much of the school day as possible. Thus, taking her out of class for three hours a day is not feasible. (D) is incorrect because referral to an otolaryngologist for a cochlear-implant evaluation is not warranted by the history and audiometric results.

4. The correct answer is (B). The progress of all children with documented hearing loss must be followed by the school, and the specific recommendations for each child must be described in an Individualized Education Program. (A) is incorrect because an Individualized Family Service Plan is required for children 0 to 3 years of age. (C) is incorrect because under IDEA, report cards are not required to indicate an audiologist's recommendations. (D) is incorrect because the case study does not indicate that Kim has behavioral problems, so a behavioral intervention plan is not correct. (E) is incorrect because a child's cumulative record does not reflect any related service recommendation.

5. The correct answer is (D). The evaluation shows that the middle ear and the cochlea are probably intact and that a surgeon has only to open the occluded canals for hearing to be made functional. However, to perform surgery on a six-month-old child without having more information about hearing competence would be unwarranted. Because bilateral atresia often can be handled through a bone-conduction hearing aid, such a device should be tried first and the child's growth and development monitored to determine when surgery should take place. (A), (B), (C), and (E) are incorrect because they are not appropriate courses of action based on the evaluation of the child.

6. The correct answer is (D). A unilateral weakness indicates a disorder of the labyrinthine or the VIIIth nerve on the same side as the weakness. Thus, in this case the disorder is indicated on the left side, not the right side, so (D) is the correct answer and (A) is incorrect. (B) is incorrect because the finding is of great value, since it has determined that a unilateral peripheral problem exists. (C) is incorrect because the disorder is localized to the periphery. (E) is incorrect because a central vestibular disorder is ruled out by these results.

7. The correct answer is (E). The question gives a definition of test sensitivity. (A) is incorrect because not all sensitive tests have reliability (the ability of the test to show consistent results for the same subject under different conditions). Validity is the ability of a test to measure what it is designed to measure; a test can be sensitive without being valid if there are too many false-positives, so (B) is incorrect. (C) is incorrect because a test can correctly identify individuals with hearing disorders without identifying the subjects' precise thresholds.

Specificity refers to how accurately the test identifies those individuals who do not have a hearing loss, so (D) is incorrect.

8. The correct answer is (B). The acoustic reflex measurement helps to determine the site of lesion of facial nerve disorder as either distal or proximal to the stapedial branch of the VIIth nerve. If the acoustic reflex is present at normal HTLs, the localization of pathology is likely distal to the stapedius branch of the nerve. (A), (C), (D), and (E) are incorrect as the reflexes do not indicate the descriptions put forth in each option.

9. The correct answer is (C). Cochlear implants are typically recommended for individuals with profound or severe-to-profound bilateral sensorineural hearing losses; adult meningitis is likely to cause such hearing loss. (A) and (B) are incorrect because individuals with hearing losses due to chronic otitis media or noise exposure are likely to benefit from amplification; hearing losses with those etiologies tend to be less than profound. Unilateral hearing losses generally do not require intervention as drastic as a cochlear implant, so (D) and (E) are incorrect. Furthermore, (E) is incorrect because successful use of a cochlear implant requires an intact auditory nerve (VIIIth nerve) and surgery for vestibular schwannoma usually destroys this nerve.

10. The correct answer is (D). PL 99-457 specifies that a plan be developed, but does not specify the type of services to be delivered. (A), (B), (C), and (E) are incorrect because they specify particular types of services.

11. The correct answer is (D). A bone-conduction hearing aid can boost the bone-conduction signal and provide enough amplification to be helpful to clients with moderate hearing loss, and the hearing aid will not interfere with the drainage of the ear. (A) is incorrect because hearing aids with earmolds are unsuitable for clients with chronic drainage because the drainage would damage the earmold and the additional blockage of the external canal would exacerbate the drainage problem and increase the likelihood of infection. (B) is incorrect because body-worn hearing aids are coupled to earmolds and may provide more power than is necessary for people with only moderate hearing loss. (C) and (E) are incorrect because vibrotactile aids and cochlear implants are useful only for clients with profound hearing losses who cannot benefit from amplification.

12. The correct answer is (B). Probe tubes for measuring real-ear sound-pressure levels (SPL) should be inserted as close to the tympanic membrane as possible, since it is the SPL at the tympanic membrane that is being measured. If the probe tube is too far from the tympanic membrane, high-frequency sound waves bounced off the eardrum will dissipate before reaching the probe, but low-frequency sound waves, which do not dissipate as easily, will be essentially unaffected. The overall effect will thus be a decrease only in the high-frequency response. (A), (C), (D), and (E) are incorrect because they describe incorrect frequency results.

13. The correct answer is (A). As noted in the question, a pair of tones is presented via an earphone in the measurement of DPOAEs. Because the normal auditory system is nonlinear, when two primary tones are introduced into the ear, distortion products are produced. The largest distortion product, and the one recorded in the evaluation of DPOAEs, is the cubic difference tone. (B) and (C) are incorrect because a summation tone may occur and harmonics may occur, but they will be very small, definitely not large enough to be measured. (D) and (E) are incorrect because hair cells do not resonate.

14. The correct answer is (D). Approximately 40 percent of patients with Usher's syndrome show a profound hearing loss with vestibular dysfunction and an early onset of retinitis pigmentosa (RP), a progressive degeneration of the retina that leads to loss of night vision, restriction of visual fields, and, ultimately, blindness. (A), (B), (C), and (E) are incorrect because the etiologies are not associated with progressive visual deterioration.

15. The correct answer is (E). Cerumen is created by a combination of secretions from sweat glands and sebum glands, which are located in the cartilaginous outer third of the ear canal. (A), (B), (C), and (D) are incorrect because they do not describe the correct location.

16. The correct answer is (C). Using an FM system provides the most benefit in improving signal-to-noise ratio, so (C) would be the most appropriate recommendation for a child who has difficulty understanding speech in noise. As such, (A) and (B) would not be the most appropriate answer. (D) is incorrect because a low-gain FM system would not be appropriate considering the moderate hearing loss and the use of hearing aids. Since the child

does not have a severe-to-profound hearing loss, (E) would not be an appropriate answer because cochlear implants are for patients with severe-to-profound hearing loss.

17. The correct answer is (D). The ossicular joint is not involved in presbycusis. (A), (B), (C), and (E) are incorrect because they are the causes of four identified types of presbycusis: (A) causes sensory presbycusis, (B) causes neural presbycusis, (C) causes strial presbycusis, and (E) causes cochlear conductive presbycusis.

18. The correct answer is (C). The guidelines clearly indicate that ABR is the screening tool to be used in the neonatal intensive care unit (NICU). For an infant in the well-baby nursery, OAE can be used for screening, but ABR could also be used. (D) and (E) are incorrect because ASSR is not a recommended screening tool. (A) and (B) are incorrect because OAE is not recommended for use in the NICU.

19. The correct answer is (C). 35 dBA or less and 0.6 second or less capture the recommendations for any core learning space with an enclosed volume below 10,000 cubic feet. (A) and (B) are incorrect because the noise levels indicated are stricter than the recommendations, which were designed for practical application in school settings. (D) and (E) are incorrect because by the ANSI guidelines, the classroom acoustics indicated would exceed the recommended noise levels for an unoccupied classroom. Also, the acoustics indicated by (B) and (D) would allow reverberation times that exceed the recommendations for classrooms.

20. The correct answer is (A). The patient is complaining that loud sounds are too loud, which suggests that the MPO is set higher than the patient's loudness discomfort level. When the MPO is set too high, loud input levels continue to receive additional gain, which makes loud inputs too loud. (B) is incorrect because a narrow dynamic range means the MPO is likely set lower than it should be, reducing the usable range of audibility available to the patient. A narrow dynamic range and low MPO setting typically negatively affect speech understanding and would not make loud sounds such as door slams sound uncomfortably loud. If the problem was the occlusion effect, the patient would be complaining that his or her own voice was too loud, not external sounds. In fact, if the patient was experiencing the occlusion effect, sounds such as doors slamming may actually

sound more comfortable. Therefore, (C) is incorrect. The directivity index is a measurement that quantifies the amount of directionality provided by the polar plot of the hearing aid. A low directivity index implies poor directionality and typically poor speech understanding. It is not a direct measure of loudness. Therefore, (D) is incorrect. Fast attack and release times would actually help the patient's tolerance of loud sounds such as doors slamming because a fast attack time would quickly reduce the gain in the hearing aid after a loud transient signal was present. Therefore, (E) is incorrect.

21. The correct answer is (C). Decreasing the output compression threshold effectively lowers the MPO of the hearing aid so that loud sounds do not receive any additional gain above the output compression threshold. Setting the output compression threshold below the patient's loudness discomfort level ensures that loud sounds are not too loud. (A) is incorrect because using expansion adjusts gain for soft sounds, not loud sounds. (B) is incorrect because using frequency lowering focuses on adjusting the frequency range where gain is applied rather than on the level of gain adjustment. (D) is incorrect because decreasing the input compression ratio results in decreasing gain for soft sounds rather than loud sounds. (E) is incorrect because increasing the input compression ratio results in increasing gain for soft sounds rather than loud sounds.

22. The correct answer is (B). Starting at 34 dB, intensity will increase by 3 dB each time the number of sources is halved. So going from 1 to 2 sources/fans will increase the intensity from 34 dB to 37 dBA. Doubling the number of sources again, from two to four sources/fans, will increase the intensity another 3 dB to 40 dBA. (A) is incorrect because mathematically starting at 39 dBA and increasing twice by 3 dB will bring the total to 45 dBA, which exceeds the allowable maximum of 40 dBA. (C) is incorrect because mathematically starting at 28 dBA and increasing twice by 3 dB will bring the total to 34 dBA, which is below the allowable maximum of 40 dBA. (D) is incorrect because mathematically starting at 20 dBA and increasing twice by 3 dB will bring the total to 26 dBA, which is below the allowable maximum of 40 dBA. (E) is incorrect because mathematically starting at 10 dBA and increasing twice by 3 dB will bring the total to 16 dBA, which is below the allowable maximum of 40 dBA.

23. The correct answer is (A). The thin or absent bony covering of the superior semicircular canal (SSC) allows pressure from the external auditory canal to be transferred to and stimulate the SSC, resulting in dizziness. (B) is incorrect because tinnitus is not associated with SSCD. (C) is incorrect because a persistent feeling of spinning is not associated with SSCD. Dizziness with SSCD is intermittent and associated with loud sounds or pressure changes. (D) is incorrect because difficulty walking is not associated with SSCD. (E) is incorrect because hearing loss is not associated with SSCD.

24. The correct answer is (C). cVEMPs are myogenic responses elicited by acoustic stimulation of the otolithic organs, specifically, the saccule. The saccule is innervated by the inferior branch of the vestibular nerve, which has been shown to project to the lateral vestibular nucleus, the origin of fibers that descend by way of the lateral vestibular tract to anterior horn cells, which affect the contraction of the sternocleidomastoid muscle, the source of cVEMPs. (A) is incorrect because bithermal calorics activate the horizontal semicircular canal, which is innervated by the superior branch of the vestibular nerve. (B) is incorrect because the head shake test activates the horizontal semicircular canals, which are innervated by the superior branch of the vestibular nerve. (D) is incorrect because oVEMPs are thought to be generated by acoustic activation of the utricle, which is innervated by the superior branch of the vestibular nerve. (E) is incorrect because the rotary chair activates the horizontal semicircular canals, which are innervated by the superior branch of the vestibular nerve. The rotary chair can be used to activate the utricle, which is also innervated by the superior branch of the vestibular nerve.

25. The correct answer is (C). Localization in the horizontal plane (which is the task required to locate voices in a group) is based on the spatial cues of interaural time and intensity. (A) is incorrect because pinna filtering is not distorted with in-the-canal hearing aids, and pinna cues are primarily used for vertical localization. (B) is incorrect because ear-canal resonance is not eliminated by hearing aids; ear-canal resonance is altered by hearing aids. (D) is incorrect because divided attention is not needed to locate a single source. (E) is incorrect because frequency selectivity is not important for locating a sound source in the horizontal plane.

26. The correct answer is (D). SNR loss is defined as the increase in signal-to-noise ratio required by a listener to obtain a 50% correct score as compared to normal performance. Listeners with normal hearing achieve a 50% correct score at a 2 dB SNR. Therefore, if the person with a hearing loss requires the signal to be at 12 dB, the SNR loss is calculated by subtracting 2 dB (normal performance) from 12 dB (impaired performance). (A) is incorrect because 12 minus 2 is not -4 dB, and an SNR loss of -4 dB implies excellent speech perception. (B), (C), and (E) are incorrect because they do not give the correct levels.

27. The correct answer is (B). The case description specifies manufacturing, which falls under general industry and therefore under the authority of the Occupational Safety and Health Administration. (A) is incorrect because the National Institute for Occupational Safety and Health (NIOSH) is an advisory institute that does not make regulations. (C) is incorrect because the Mine Safety and Health Administration does not establish regulations for manufacturing. (D) is incorrect because the Federal Railroad Administration does not establish regulations for manufacturing. (E) is incorrect because ANSI S3.19 is a standard that deals with noise reduction ratings.

28. The correct answer is (A). Pronounced acoustic reflex decay is associated with pathologies located between the cochlea and the cochlear nucleus (that is, at the first-order afferent nerve fibers). (B) is incorrect because admittance is a measure of middle-ear function and provides no indications of retrocochlear function. (C) is incorrect because loudness recruitment is associated with cochlear, not retrocochlear, pathologies. (D) is incorrect because individuals with retrocochlear pathologies typically have poor speech recognition in noise. (E) is incorrect because the “cookie bite” configuration, in which hearing loss is greater at middle frequencies than at low or high frequencies, is associated with metabolic cochlear disorders; individuals with retrocochlear pathologies typically have the greatest hearing loss at high frequencies.

29. The correct answer is (E). Recent onset of hearing loss unilaterally and with poor speech recognition could suggest a retrocochlear lesion. The patient should be referred to a physician for diagnosis. (A) is incorrect because discussion of a hearing aid evaluation should take place only after a physician has ruled out medical and/or surgical intervention. (B) is incorrect because relevant

audiometric tests have been completed and cannot rule out the possibility of a retrocochlear lesion. (C) is incorrect because an ENG would be recommended only if the patient were experiencing dizziness or vertigo. (D) is incorrect because ASSR would not provide any neurodiagnostic information.

30. The correct answer is (A). Repeatability is crucial for the reliability of test results. Obtaining a second waveform under identical stimulation and recording conditions provides a check of reliability by determining repeatability. (B), (C), (D), and (E) are incorrect because changing any of the conditions will essentially result in a different test being performed, so the original results will not be shown to have been repeated.

4. Determine Your Strategy for Success

Set clear goals and deadlines so your test preparation is focused and efficient

Effective *Praxis* test preparation doesn't just happen. You'll want to set clear goals and deadlines for yourself along the way. Otherwise, you may not feel ready and confident on test day.

1) Learn what the test covers.

You may have heard that there are several different versions of the same test. It's true. You may take one version of the test and your friend may take a different version a few months later. Each test has different questions covering the same subject area, but both versions of the test measure the same skills and content knowledge.

You'll find specific information on the test you're taking on page 29, which outlines the content categories that the test measures and what percentage of the test covers each topic. Visit www.ets.org/praxis/testprep for information on other *Praxis* tests.

2) Assess how well you know the content.

Research shows that test takers tend to overestimate their preparedness—this is why some test takers assume they did well and then find out they did not pass.

The *Praxis* tests are demanding enough to require serious review of likely content, and the longer you've been away from the content, the more preparation you will most likely need. If it has been longer than a few months since you've studied your content area, make a concerted effort to prepare.

3) Collect study materials.

Gathering and organizing your materials for review are critical steps in preparing for the *Praxis* tests. Consider the following reference sources as you plan your study:

- Did you take a course in which the content area was covered? If yes, do you still have your books or your notes?
- Does your local library have a high school-level textbook in this area? Does your college library have a good introductory college-level textbook in this area?

Practice materials are available for purchase for many *Praxis* tests at www.ets.org/praxis/testprep. Test preparation materials include sample questions and answers with explanations.

4) Plan and organize your time.

You can begin to plan and organize your time while you are still collecting materials. Allow yourself plenty of review time to avoid cramming new material at the end. Here are a few tips:

- Choose a test date far enough in the future to leave you plenty of preparation time. Test dates can be found at www.ets.org/praxis/register/dates_centers.
- Work backward from that date to figure out how much time you will need for review.
- Set a realistic schedule—and stick to it.

5) Practice explaining the key concepts.

Praxis tests with constructed-response questions assess your ability to explain material effectively. As a teacher, you'll need to be able to explain concepts and processes to students in a clear, understandable way. What are the major concepts you will be required to teach? Can you explain them in your own words accurately, completely, and clearly? Practice explaining these concepts to test your ability to effectively explain what you know.

6) Understand how questions will be scored.

Scoring information can be found on page 48.

7) Develop a study plan.

A study plan provides a road map to prepare for the *Praxis* tests. It can help you understand what skills and knowledge are covered on the test and where to focus your attention. Use the study plan template on page 29 to organize your efforts.

And most important—get started!

Would a Study Group Work for You?

Using this guide as part of a study group

People who have a lot of studying to do sometimes find it helpful to form a study group with others who are working toward the same goal. Study groups give members opportunities to ask questions and get detailed answers. In a group, some members usually have a better understanding of certain topics, while others in the group may be better at other topics. As members take turns explaining concepts to one another, everyone builds self-confidence.

If the group encounters a question that none of the members can answer well, the group can go to a teacher or other expert and get answers efficiently. Because study groups schedule regular meetings, members study in a more disciplined fashion. They also gain emotional support. The group should be large enough so that multiple people can contribute different kinds of knowledge, but small enough so that it stays focused. Often, three to six members is a good size.

Here are some ways to use this guide as part of a study group:

- **Plan the group's study program.** Parts of the study plan template, beginning on page 29, can help to structure your group's study program. By filling out the first five columns and sharing the worksheets, everyone will learn more about your group's mix of abilities and about the resources, such as textbooks, that members can share with the group. In the sixth column ("Dates I will study the content"), you can create an overall schedule for your group's study program.
- **Plan individual group sessions.** At the end of each session, the group should decide what specific topics will be covered at the next meeting and who will present each topic. Use the topic headings and subheadings in the Test at a Glance table on page 5 to select topics, and then select practice questions, beginning on page 15.
- **Prepare your presentation for the group.** When it's your turn to present, prepare something that is more than a lecture. Write two or three original questions to pose to the group. Practicing writing actual questions can help you better understand the topics covered on the test as well as the types of questions you will encounter on the test. It will also give other members of the group extra practice at answering questions.

- **Take a practice test together.** The idea of a practice test is to simulate an actual administration of the test, so scheduling a test session with the group will add to the realism and may also help boost everyone's confidence. Remember, complete the practice test using only the time that will be allotted for that test on your administration day.
- **Learn from the results of the practice test.** Review the results of the practice test, including the number of questions answered correctly in each content category. For tests that contain constructed-response questions, look at the Sample Test Questions section, which also contain sample responses to those questions and shows how they were scored. Then try to follow the same guidelines that the test scorers use.
- **Be as critical as you can.** You're not doing your study partner(s) any favors by letting them get away with an answer that does not cover all parts of the question adequately.
- **Be specific.** Write comments that are as detailed as the comments about the sample responses. Indicate where and how your study partner(s) are doing an inadequate job of answering the question. Writing notes in the margins of the answer sheet may also help.
- **Be supportive.** Include comments that point out what your study partner(s) got right.

Then plan one or more study sessions based on aspects of the questions on which group members performed poorly. For example, each group member might be responsible for rewriting one paragraph of a response in which someone else did an inadequate job.

Whether you decide to study alone or with a group, remember that the best way to prepare is to have an organized plan. The plan should set goals based on specific topics and skills that you need to learn, and it should commit you to a realistic set of deadlines for meeting those goals. Then you need to discipline yourself to stick with your plan and accomplish your goals on schedule.

5. Develop Your Study Plan

Develop a personalized study plan and schedule

Planning your study time is important because it will help ensure that you review all content areas covered on the test. Use the sample study plan below as a guide. It shows a plan for the *Core Academic Skills for Educators: Reading* test. Following that is a study plan template that you can fill out to create your own plan. Use the “Learn about Your Test” and “Test Specifications” information beginning on page 5 to help complete it.

Use this worksheet to:

- 1. Define Content Areas:** List the most important content areas for your test as defined in chapter 1.
- 2. Determine Strengths and Weaknesses:** Identify your strengths and weaknesses in each content area.
- 3. Identify Resources:** Identify the books, courses, and other resources you plan to use for each content area.
- 4. Study:** Create and commit to a schedule that provides for regular study periods.

Praxis Test Name (Test Code): Core Academic Skills for Educators: Reading (5712)

Test Date: 9/15/17

Content covered	Description of content	How well do I know the content? (scale 1–5)	What resources do I have/need for the content?	Where can I find the resources I need?	Dates I will study the content	Date completed
Key Ideas and Details						
Close reading	Draw inferences and implications from the directly stated content of a reading selection	3	Middle school English textbook	College library, middle school teacher	7/15/17	7/15/17
Determining Ideas	Identify summaries or paraphrases of the main idea or primary purpose of a reading selection	3	Middle school English textbook	College library, middle school teacher	7/17/17	7/17/17
Determining Ideas	Identify summaries or paraphrases of the supporting ideas and specific details in a reading selection	3	Middle and high school English textbook	College library, middle and high school teachers	7/20/17	7/21/17
Craft, Structure, and Language Skills						
Interpreting tone	Determine the author's attitude toward material discussed in a reading selection	4	Middle and high school English textbook	College library, middle and high school teachers	7/25/17	7/26/17
Analysis of structure	Identify key transition words and phrases in a reading selection and how they are used	3	Middle and high school English textbook, dictionary	College library, middle and high school teachers	7/25/17	7/27/17
Analysis of structure	Identify how a reading selection is organized in terms of cause/effect, compare/contrast, problem/solution, etc.	5	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/1/17	8/1/17
Author's purpose	Determine the role that an idea, reference, or piece of information plays in an author's discussion or argument	5	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/1/17	8/1/17

(continued on next page)

Content covered	Description of content	How well do I know the content? (scale 1–5)	What resources do I have/need for the content?	Where can I find the resources I need?	Dates I will study the content	Date completed
Language in different contexts	Determine whether information presented in a reading selection is presented as fact or opinion	4	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/1/17	8/1/17
Contextual meaning	Identify the meanings of words as they are used in the context of a reading selection	2	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/1/17	8/1/17
Figurative Language	Understand figurative language and nuances in word meanings	2	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/8/17	8/8/17
Vocabulary range	Understand a range of words and phrases sufficient for reading at the college and career readiness level	2	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/15/17	8/17/17
Integration of Knowledge and Ideas						
Diverse media and formats	Analyze content presented in diverse media and formats, including visually and quantitatively, as well as in words	2	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/22/17	8/24/17
Evaluation of arguments	Identify the relationship among ideas presented in a reading selection	4	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/24/17	8/24/17
Evaluation of arguments	Determine whether evidence strengthens, weakens, or is relevant to the arguments in a reading selection	3	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/27/17	8/27/17
Evaluation of arguments	Determine the logical assumptions upon which an argument or conclusion is based	5	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/28/17	8/30/17
Evaluation of arguments	Draw conclusions from material presented in a reading selection	5	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/30/17	8/31/17
Comparison of texts	Recognize or predict ideas or situations that are extensions of or similar to what has been presented in a reading selection	4	High school textbook, college course notes	College library, course notes, high school teacher, college professor	9/3/17	9/4/17
Comparison of texts	Apply ideas presented in a reading selection to other situations	2	High school textbook, college course notes	College library, course notes, high school teacher, college professor	9/5/17	9/6/17

My Study Plan

Use this worksheet to:

- 1. Define Content Areas:** List the most important content areas for your test as defined in chapter 1.
- 2. Determine Strengths and Weaknesses:** Identify your strengths and weaknesses in each content area.
- 3. Identify Resources:** Identify the books, courses, and other resources you plan to use for each content area.
- 4. Study:** Create and commit to a schedule that provides for regular study periods.

Praxis Test Name (Test Code): _____

Test Date: _____

Content covered	Description of content	How well do I know the content? (scale 1–5)	What resources do I have/need for this content?	Where can I find the resources I need?	Dates I will study this content	Date completed

(continued on next page)

Content covered	Description of content	How well do I know the content? (scale 1–5)	What resources do I have/need for the content?	Where can I find the resources I need?	Dates I will study the content	Date completed

6. Review Study Topics

Detailed study topics with questions for discussion

Using the Study Topics That Follow

The Audiology test is designed to measure the subject-area knowledge and competencies necessary for a beginning audiologist.

This chapter is intended to help you organize your preparation for the test and to give you a clear indication of the depth and breadth of the knowledge required for success on the test.

You are not expected to be an expert on all aspects of the topics that follow. You should understand the major characteristics of each topic, recognize the minor topics, and have some familiarity with the subtopics. Virtually all accredited graduate audiology programs address the majority of these topics, subtopics, and even minor topics.

Here, for instance, is one of the topic lists in “Assessment” under “Audiologic Evaluation - Physiologic”:

- Auditory brainstem response (ABR) testing
- Threshold testing with clicks
- Threshold testing with tone bursts
- ABR bone conduction threshold testing
- ABR for neurodiagnostic evaluation

Referring to textbooks or other sources as needed, make sure you can describe in your own words the differences between these kinds of ABR testing and the clinical circumstances in which they would be appropriate.

You are likely to find that many of the topics below are covered by your audiology textbooks, but a general survey textbook may not cover all of the subtopics. Consult materials and resources, including lecture notes, from all your audiology course work. You should be able to match up specific topics and subtopics with what you have covered in your courses.

Try not to be overwhelmed by the volume and scope of content knowledge in this guide. An overview such as this that lists audiology topics does not offer you a great deal of context. Although a specific term may not seem familiar as you see it here, you might find you could understand it when applied to a real-life clinical situation. Many of the items on the actual Praxis test will provide you with a context to apply to these topics or terms.

Discussion Areas

Interspersed throughout the study topics are discussion areas, presented as open-ended questions or statements. These discussion areas are intended to help test your knowledge of fundamental concepts and your ability to apply those concepts to situations in the real world. Most of the areas require you to combine several pieces of knowledge to formulate an integrated understanding and response. If you spend time on these areas, you will gain increased understanding and facility with the subject matter covered on the test. You may want to discuss these areas and your answers with a teacher or mentor.

Note that the questions are not short-answer or multiple-choice and that this study companion does **not** provide the answers. They are intended as study questions, not practice questions. Thinking about the answers to them should improve your understanding of fundamental concepts and will probably help you answer a broad range of questions on the test. For example, the following question appears in the list of study topics under “Screening and Risk Assessment”:

What are the most common screening tools used in newborn screenings?

List the pros and cons of each. If you think about this question, perhaps jotting down some notes on hearing screening, you will have probably prepared yourself to answer selected-choice questions similar to the one below:

In an infant hearing-screening program, a behavioral-testing component may include the arousal test. Which of the following is the best state for testing an infant using the arousal test?

- (A) Active and awake
- (B) Drowsy or light sleep state
- (C) Inactive and awake
- (D) Actively feeding
- (E) Deep sleep state

The correct answer is (B). The arousal test requires the infant to waken from sleep; in a light sleep state, the infant is most likely to waken upon hearing a noise, so (B) is the correct answer. (A), (C), and (D) are incorrect because they describe cases in which the infant is already awake and so cannot be awakened. In a deep sleep state, the infant may not rouse even to a loud noise, so (E) is incorrect.

Study Topics

An overview of the areas covered on the test, along with their subareas, follows.

I. Foundations (10%)

A. Acoustics/psychoacoustics

1. Basic parameters of sound
2. Principles of acoustics as related to speech sounds
3. Sound measurement
4. Psychoacoustic principles, methods, and applications

B. Anatomy, physiology, and behavior over the life span

1. The auditory system
2. The balance system
3. Neuroanatomy and neurophysiology

4. Embryology and development of hearing and balance mechanisms
5. Normal processes of auditory behavior over the life span
6. Language and speech characteristics and their development over the life span
7. Effects of hearing loss on language and speech, and on educational, vocational, social, and psychological functioning

C. Etiology

1. Genetics and associated syndromes related to hearing and balance
2. Pathologies related to hearing and balance and their medical diagnosis and treatment
3. Pharmacology, ototoxicity, and vestibulotoxicity

D. Psychometrics and Instrumentation

1. Test construction principles
2. Test reliability and validity
3. Calibration of audiometric equipment

E. Principles of counseling

F. Cultural and linguistic diversity, including Deaf Culture

Discussion areas: Foundations

- What is the relationship between the fundamental frequency and harmonics?
- In which frequencies and at what intensities are most speech sounds produced?
- Define threshold.
- What is the relationship between sound pressure level (SPL) and hearing level (HL)?
- Describe the function of each of the three major parts of the hearing mechanism.
- What is the function of hair cells (outer and inner)?
- What are the fluids found in the labyrinths of the inner ear?
- What impacts can hearing loss cause for learning in children (e.g., effects on language acquisition)?
- Describe the differences in speech and language development between pre- and postlinguistically deafened children.
- What impacts can hearing loss cause for adults (e.g., social isolation)?
- What are the etiologies of hearing loss present at birth?

- What are the characteristics of syndromes that affect hearing and balance (e.g., Usher, Waardenburg, Treacher-Collins, Marfan, Goldenhar)?
- What are the types of presbycusis? What parts of the hearing system are implicated in the different types and what are the effects on hearing?
- Why does fluid accumulate behind the tympanic membrane in the middle ear space during otitis media?
- Name the condition associated with bony growth surrounding the bones of the middle ear and describe the type of hearing loss that accompanies it.
- Which commonly used pharmaceuticals can affect balance? Which are ototoxic?
- What pathologies are associated with reports of dizziness?
- What is the difference between validity and reliability for an assessment?
- What features of an assessment will affect its reliability?
- What is calibration and what function does it serve?
- Describe different approaches to counseling and what they are intended to achieve.
- What kinds of changes in assessment, treatment and counseling are appropriate for patients from different cultural and linguistic backgrounds?

II. Prevention and Identification (10%)

A. Education and Prevention (Conservation)

1. Informing clients about
 - a. causes and effects of hearing loss (congenital and acquired)
 - b. causes and effects of vestibular disorders
 - c. protection from hearing loss and vestibular disorders
2. Universal precautions, including infection control and bioelectrical hazards
3. Selecting and fitting hearing protection devices (HPDs)

B. Screening and Risk Assessment

1. Selecting and administering procedures to identify individuals who require
 - a. further audiologic evaluation and/or treatment
 - b. referral for speech and/or language assessment
 - c. referral for other professional services
2. Identifying individuals at risk for balance problems and falls who require further vestibular evaluation and/or treatment
3. Newborn hearing screening programs (early hearing detection and intervention [EHDI])
4. Selecting, administering, and interpreting self-report measures of hearing problems

Discussion areas: Prevention and Identification

- What are the key precautions used to achieve infection control?
- What is the difference between disinfection and sterilization? When is sterilization required?
- What equipment is needed to measure noise in a classroom?
- Where can you find the guidelines for acceptable noise?
- How long can an employer expose a worker to 90 dBA sound level during the course of the workday without violating OSHA standards?
- Describe different types of hearing protection and the importance of their fit to effectiveness.
- Describe testing instrumentation that can be taken into the workplace.
- What is the value of a baseline audiogram?
- Define standard threshold shift and time-weighted average.
- Describe the screening protocols recommended for screening adults and children. How do they differ?
- Describe follow-up procedures for a person who has not passed a hearing screening.

- What do the Joint Committee on Infant Hearing recommendations require in terms of timing and screening requirements?
- What are the most common screening tools used in newborn screenings? List the pros and cons of each.
- Describe the differences in results from OAEs versus ABRs in newborn screenings.
- What different kinds of self-report measures can be used with patients and what patient factors should be taken into account in selection and interpretation?

III. Assessment (40%)

A. Assessment Planning

1. Gathering and evaluating client information (case histories and information from referral sources) to facilitate assessment planning and identify potential etiologic factors
2. Verifying proper functioning of assessment equipment
3. Selecting and modifying procedures based on client factors; e.g., age, developmental level, functional status, behavior, cultural and linguistic diversity, physical, sensory, and cognitive abilities

B. Audiologic Evaluation – Behavioral

Administering and interpreting

1. Pure-tone air and bone conduction testing
2. Speech audiometry
3. Tests for functional hearing loss
4. Tests for children above 6 months developmental age; e.g., visual reinforcement audiometry and conditioned-play audiometry

C. Audiologic Evaluation – Physiologic

Administering and interpreting

1. Immittance: tympanometry
2. Immittance: acoustic reflex testing
3. Immittance: otoacoustic emission testing
4. Immittance: other
5. AEP: auditory brainstem response (ABR) threshold testing
6. AEP: ABR for neurodiagnostic evaluation
7. AEP: auditory steady state
8. AEP: other

D. Other Assessments and Evaluations

Administering and interpreting

1. Otoscopy: performing otoscopy and ensuring appropriate follow-up, including diagnostic evaluations, intervention, and referrals
2. Self-report measures of hearing problems and their impact on daily living
3. Balance system assessment; e.g.,
 - a. videonystagmography (VNG)
 - b. electronystagmography (ENG)
 - c. rotational tests
4. Assessment of communication function; e.g.,
 - a. speech in noise testing
 - b. spatial testing
 - c. self-report measures
5. Assessment of tinnitus; e.g.,
 - a. pitch matching
 - b. loudness matching
 - c. self-report measures
6. Evaluating (central) auditory processes; e.g.,
 - a. gap detection
 - b. dichotic digits
 - c. filtered speech

E. Integrating Assessment Results

1. Integrating assessments (behavioral, physiologic, neurodiagnostic, and other evaluations)
 - a. to establish type and severity of hearing loss
 - b. to support recommendations for further evaluation and/or referral
2. Integrating balance function tests (e.g., VNG) with other results to evaluate balance function

F. Documentation and Communication

1. Documenting the procedures and results of evaluations
2. Generating recommendations based on evaluations, including referrals, as appropriate, to other audiologists and related professionals
3. Communicating results and recommendations to relevant individuals (e.g., clients, caregivers, physicians, agencies) to coordinate a plan of action

4. Interacting effectively with clients, families, other appropriate individuals, and professionals including working with interpreters (ASL and other languages, sign systems) to effectively communicate with clients

Discussion areas: Assessment

- List key components of a case history (including information about family history, accidents and medications).
- How does a pediatric case history differ from an adult case history?
- What steps need to be taken to verify the different kinds of assessment equipment?
- What patient factors can help determine appropriate assessment, e.g., the use of physiologic measures rather than behavioral assessment, the use of different kinds of behavioral assessment and the use of different kinds of stimuli?
- Describe the pure-tone air and bone conduction results associated with different kinds of hearing loss.
- What hearing thresholds are associated with different levels of hearing loss?
- How is masking implemented and what is its function?
- Discuss headphone options—list the pros and cons of each.
- What is the most significant limitation in audiological findings when sound-field presentation of tones is used?
- What is the warble tone? Why is the warble tone used when testing in the sound field?
- Define SAT, SRT, MCL, UCL. Describe the procedure for obtaining UCL.
- Having obtained a reliable SRT, how would you estimate MCL?
- At what level is a word recognition test administered?
- What are phonetically balanced word lists used for?
- Discuss the pros and cons of live-voice versus recorded-speech stimuli.
- Make a list of the age-appropriate testing methods used for infants to children age 6.

- How would you obtain speech-awareness thresholds with a very young child who does not talk?
- What is the major difference between behavior observation audiometry (BOA) and visual reinforcement audiometry (VRA)?
- How often does the audiologist reinforce the child in VRA?
- What are the different types of tympanogram and what do they indicate?
- What middle-ear condition would present with a tympanogram that is flat and acoustic reflex absent?
- What results would you expect to get if pressure-equalizing tubes are present?
- Elevated acoustic reflex levels in the presence of normal hearing might lead you to think what?
- For what suspected conditions would you obtain reflex decay?
- What do absent OAEs indicate about hearing? What do normal OAEs indicate about hearing?
- On ABR tracings, how can you tell if waves are delayed?
- In audiometric screening of workplaces, what is a standard threshold shift? How is it measured and how is it used?
- What is the role of an audiologist in intraoperative monitoring?
- When is ASSR called for as an assessment and how is ASSR testing done?
- Describe the technique for viewing via otoscopy the ear canal and the tympanic membrane.
- Describe different conditions of the ear canal that can be observed through the otoscope.
- Describe different conditions of the tympanic membrane that can be observed through the otoscope.
- As an audiologist, can you diagnose otitis media after completing otoscopy?
- List self-report scales of hearing problems and the populations they are appropriate for.
- What do rotational tests indicate about patients?

- How and why is cold water used during videonystagmographic (VNG) and electronystagmographic (ENG) testing?
- Describe the eye-movement-tracking task required in VNG/ENG testing.
- How are pitch matching, loudness matching and self reports used to assess tinnitus?
- What behavioral phenomena are associated with Central Auditory Processing Disorder (CAPD)?
- What kinds of results in gap detection and dichotic listening are suggestive of CAPD?
- What results from behavioral audiometry call for physiologic assessment to establish the patient's condition?
- List some conditions that require the integration of multiple audiometric assessments to diagnose.
- What audiological results might cause an audiologist to refer a patient for medical consultation?
- What conditions of the ear might cause an audiologist to refer a patient for medical consultation?
- In what circumstances is it crucial to communicate with individuals other than the patient?
- In what circumstances is an interpreter required in working with a patient or family? How would an audiologist locate an appropriate interpreter?

IV. Intervention (30%)

A. Treatment Planning

1. Evaluating client information to facilitate treatment planning:
 - a. information from referral sources
 - b. case histories
2. Selecting and modifying treatment procedures based on client factors; e.g., age, developmental level, functional status, behavior, cultural and linguistic diversity, physical, sensory, and cognitive abilities
3. Integrating results of assessments and other evaluations to support recommendations for treatment and/or referral

B. Device Selection

1. Evaluating client's perceived hearing handicap and expectations related to hearing devices
2. Determining candidacy for and selecting:
 - a. hearing aids
 - b. other assistive listening and alerting devices
 - c. cochlear implant(s)
 - d. other implantable devices (e.g., bone-anchored hearing aids)
3. Determining candidacy for and selecting:
 - a. hearing assistive technology system (HATS) for adults; e.g., personal and group amplification systems, assistive listening, and alerting devices
 - b. hearing assistive technology system (HATS) for children

C. Hearing Aids

1. Evaluating, for the purpose of hearing aid selection
 - a. speech recognition in noise
 - b. loudness discomfort
2. Programming hearing aids
3. Hearing aid coupling; e.g., ear mold modifications, sound bore length, materials
4. Selecting features and processing strategies based on client communication needs; e.g.,
5. type of amplitude processing
6. feedback suppression
7. direct audio input

D. Cochlear Implants

1. Programming cochlear implants
2. Evaluating implant effectiveness and making appropriate modifications
3. Selecting processing and programming strategies based on client communication needs

E. Device Verification and Validation

1. Verifying proper functioning of hearing aids and other assistive devices
2. Conducting quality control measures (e.g., electroacoustic measures, feature-specific probe microphone measures) on hearing technology
3. Probe microphone verification for children; e.g., real ear to coupler difference (RECD) aided thresholds
4. Probe microphone verification for adults; e.g.,
 - a. real ear insertion gain (REIG)
 - b. real ear aided response (REAR)
 - c. real ear saturation response (RESR)
5. Evaluating hearing technology effectiveness; e.g., outcome measures, aided speech recognition
6. Repairing and modifying hearing technology devices, when appropriate

F. Audiologic (Re)habilitation/Intervention

1. Evaluating and modifying audiologic (re)habilitation, including therapy schedule, discharge criteria, frequency, duration, and type of service
2. Teaching communication strategies to clients and their significant others; e.g.,
 - a. speech reading
 - b. conversational repair strategies
3. Facilitating communication development and/or auditory learning (listening, speech, expressive, and receptive language)
4. Providing support for school-age children; e.g.,
 - a. counseling
 - b. addressing the acoustic environment
 - c. consulting with educational personnel
 - d. providing direct therapy

G. Tinnitus Management

1. Counseling and sound management intervention (e.g., environmental sound sources, ear level sound generators) and follow-up

H. Vestibular Rehabilitation

1. Treatment for benign paroxysmal positional vertigo (BPPV)

I. Counseling

1. Counseling related to device use and safety
2. Counseling children's caregivers about hearing loss, communication development, and modes of communication
3. Providing individual, family, and group counseling related to hearing loss and subsequent communication and areas of psychosocial, behavioral, vocational, and educational adjustment
4. Making referrals, as appropriate, to other audiologists and related professionals

J. Documentation and Communication

1. Documentation of intervention processes and results
2. Generating recommendations resulting from intervention processes
3. Communication of recommendations to relevant individuals (e.g., clients, caregivers, physicians, agencies) to coordinate a plan of action
4. Interacting effectively with clients, families, other appropriate individuals, and professionals including working with interpreters (ASL and other languages, sign systems) to effectively communicate with clients about treatment

Discussion areas: Intervention

- Why is etiology a critical factor in developing a plan for rehabilitation?
- How often would you recommend an audiologist see a young child who has just been identified with a sensorineural hearing loss?
- List interventions whose effectiveness is especially dependent on client behavior that can be affected by cultural background, by physical ability, or by cognitive function.
- Why is age of onset an important factor in evaluating a disability/handicap?
- Describe the criteria for selecting appropriate assistive devices for patients. Describe how different assistive devices work.

- What are some assistive devices that may help a hearing-impaired person around the house, at the movie theater, or at worship services?
- List assistive devices that may be appropriate for a hearing-impaired individual with a high degree of communicative needs (e.g., someone still in the workforce with an active social life).
- What assistive device do children who have hearing loss most often use in the classroom?
- How do tactile devices provide speech information to the wearer?
- List the criteria for assessing a person's need for a hearing aid. What are the tools available to assist in this task?
- What criteria make a patient a candidate for a cochlear implant or an osseointegrated cochlear stimulator?
- Describe the process of obtaining *Desired Sensation Level*, or *DSL*. With what population is it used?
- Describe the functions of each of the major components of a hearing aid.
- List different types of hearing aids and their advantages and disadvantages.
- What are the advantages and disadvantages of behind the ear (BTE) hearing aids compared to completely in the canal (CIC) hearing aids? Are CIC hearing aids better than BTE hearing aids for retaining the natural resonating properties of the outer ear?
- What is the advantage of getting the hearing aid closer to the tympanic membrane?
- What features of a hearing aid can be adjusted and how can they be used to optimize performance for a patient?
- What is dynamic range and why is it necessary in the fitting of a hearing aid?
- Define functional gain.
- What types of modifications can be made by changing tubing, and by venting the earmold?
- Describe the mapping process for cochlear implants.
- What features of a cochlear implant can be modified and how can they be used to optimize performance for the patient?
- What is the minimum age for which cochlear implantation is approved by the FDA?
- In general, how is the effectiveness of a cochlear implant affected by whether the patient was deafened prelinguistically or postlinguistically?
- What are means of hearing aid verification and validation?
- Describe procedures for verifying the functioning of hearing aids?
- How is verification of hearing aids different for children than for adults?
- What is the purpose of real-ear measurement?
- Describe real-ear measurement procedures.
- What are outcomes measures that can be used to evaluate effectiveness of hearing aids and other assistive technology?
- What activities are involved in early intervention?
- What is auditory/verbal therapy?
- Why are hearing aids vital to audiologic habilitation/rehabilitation?
- Describe an auditory training program for a child implanted with an artificial cochlea at three years.
- Describe a program designed for a person with a moderate high-frequency hearing loss who refuses to consider amplification.
- What are the standards for classroom acoustics in terms of noise level and reverberation time?
- What different interventions can be used to alleviate the impact of tinnitus?
- What is the goal of tinnitus counseling and management?

- Identify treatments audiologists can provide for balance issues.
- List the kinds of intervention that can alleviate benign paroxysmal positional vertigo?
- What are the crucial aspects of device use to counsel patients about regarding hearing aids, regarding cochlear implants?
- What factors of a case put it outside the scope of audiologic practice?
- What factors call for referral to a speech-language pathologist, to an otolaryngologist, another audiologist?
- What are critical features of the documentation of intervention and results of intervention?
- What are critical features of communication regarding intervention?
- Describe cases that call for the inclusion of individuals besides the patient in communication about intervention.

V. Professional Issues (10%)

A. Professional Practice

1. Different service delivery models in health care and school-based settings
2. Management and business practices; e.g.,
 - a. coding and reimbursement
 - b. case management
3. Effective and appropriate communication of results, recommendations, and intervention status
 - a. selecting the means of communication; e.g., formal reports, notes, emails, phone calls
 - b. using language appropriate for the recipient
 - c. maintaining client/patient privacy
4. Equipment calibration and maintenance to standards and manufacturer's specifications

B. Legal and Ethical Practice and Advocacy

1. Standards for professional conduct
2. Protection of clients'/patients' rights
3. Legislative and regulatory mandates
4. Advocacy for appropriate services
 - a. underserved populations
 - b. inclusion of services in individualized education programs (IEPs)
 - c. insurance appeals

C. Evidence-Based Practice

1. Application of research findings to maintain currency in care
2. Research principles and practices; e.g., experimental design, statistical methods, and application to clinical populations

Discussion areas: Professional Issues

- What is the role of the audiologist in nursing homes/assisted living care?
- What are appropriate roles for audiology techs and aides?
- How does coding for diagnosis and for billing work in audiology?
- How and when do you perform biological calibration of instruments (audiometers, middle ear analyzers, OAEs)?
- In what situations would it be necessary to obtain permission from an audiology patient or parent?
- What is informed consent?
- Discuss confidentiality of patients' records as prescribed by the ASHA Code of Ethics.
- How long is it necessary to keep patient records?
- Describe the requirements of HIPAA.
- What is a standard procedure to ensure that all members of the office staff are conforming to HIPAA?
- When should unethical (or suspected unethical) conduct be reported to appropriate licensing or regulatory boards?
- What provisions of educational legislation (e.g., IDEA) have an impact on audiologic practice?

- What is the role of an audiologist on an IEP team?
- In what circumstances is advocacy for a patient by an audiologist required and appropriate?
- What is the meaning of statistical significance?
- Explain the terms “dependent variable” and “independent variable” as they relate to experimental design.
- What features of research supports generalizability of findings?
- Who determines whether a task required by a subject in an experiment may be invasive?
- What is a Human Subjects Board?
- Before administering a test, what must you do? How can you be sure it is an appropriate measure for the intended client?

7. Review Smart Tips for Success

Follow test-taking tips developed by experts

Learn from the experts. Take advantage of the following answers to questions you may have and practical tips to help you navigate the *Praxis* test and make the best use of your time.

Should I guess?

Yes. Your score is based on the number of questions you answer correctly, with no penalty or subtraction for an incorrect answer. When you don't know the answer to a question, try to eliminate any obviously wrong answers and then guess at the correct one. Try to pace yourself so that you have enough time to carefully consider every question.

Can I answer the questions in any order?

You can answer the questions in order or skip questions and come back to them later. If you skip a question, you can also mark it so that you can remember to return and answer it later. Remember that questions left unanswered are treated the same as questions answered incorrectly, so it is to your advantage to answer every question.

Are there trick questions on the test?

No. There are no hidden meanings or trick questions. All of the questions on the test ask about subject matter knowledge in a straightforward manner.

Are there answer patterns on the test?

No. You might have heard this myth: the answers on tests follow patterns. Another myth is that there will never be more than two questions in a row with the correct answer in the same position among the choices. Neither myth is true. Select the answer you think is correct based on your knowledge of the subject.

Can I write on the scratch paper I am given?

Yes. You can work out problems on the scratch paper, make notes to yourself, or write anything at all. Your scratch paper will be destroyed after you are finished with it, so use it in any way that is helpful to you. But make sure to select or enter your answers on the computer.

Smart Tips for Taking the Test

- 1. Skip the questions you find extremely difficult.** Rather than trying to answer these on your first pass through the test, you may want to leave them blank and mark them so that you can return to them later. Pay attention to the time as you answer the rest of the questions on the test, and try to finish with 10 or 15 minutes remaining so that you can go back over the questions you left blank. Even if you don't know the answer the second time you read the questions, see if you can narrow down the possible answers, and then guess. Your score is based on the number of right answers, so it is to your advantage to answer every question.

2. **Keep track of the time.** The on-screen clock will tell you how much time you have left. You will probably have plenty of time to answer all of the questions, but if you find yourself becoming bogged down, you might decide to move on and come back to any unanswered questions later.
3. **Read all of the possible answers before selecting one.** For questions that require you to select more than one answer, or to make another kind of selection, consider the most likely answers given what the question is asking. Then reread the question to be sure the answer(s) you have given really answer the question. Remember, a question that contains a phrase such as “Which of the following does NOT . . .” is asking for the one answer that is NOT a correct statement or conclusion.
4. **Check your answers.** If you have extra time left over at the end of the test, look over each question and make sure that you have answered it as you intended. Many test takers make careless mistakes that they could have corrected if they had checked their answers.
5. **Don’t worry about your score when you are taking the test.** No one is expected to answer all of the questions correctly. Your score on this test is not analogous to your score on the *GRE*[®] or other tests. It doesn’t matter on the *Praxis* tests whether you score very high or barely pass. If you meet the minimum passing scores for your state and you meet the state’s other requirements for obtaining a teaching license, you will receive a license. In other words, what matters is meeting the minimum passing score. You can find passing scores for all states that use the *Praxis* tests at <https://www.ets.org/praxis/institutions/scores/passing/> or on the web site of the state for which you are seeking certification/licensure.
6. **Use your energy to take the test, not to get frustrated by it.** Getting frustrated only increases stress and decreases the likelihood that you will do your best. Highly qualified educators and test development professionals, all with backgrounds in teaching, worked diligently to make the test a fair and valid measure of your knowledge and skills. Your state painstakingly reviewed the test before adopting it as a licensure requirement. The best thing to do is concentrate on answering the questions.

8. Check on Testing Accommodations

See if you qualify for accommodations to take the Praxis test

What if English is not my primary language?

Praxis tests are given only in English. If your primary language is not English (PLNE), you may be eligible for extended testing time. For more details, visit https://www.ets.org/praxis/register/plne_accommodations/.

What if I have a disability or other health-related need?

The following accommodations are available for *Praxis* test takers who meet the Americans with Disabilities Act (ADA) Amendments Act disability requirements:

- Extended testing time
- Additional rest breaks
- Separate testing room
- Writer/recorder of answers
- Test reader
- Sign language interpreter for spoken directions only
- Perkins Braille
- Braille slate and stylus
- Printed copy of spoken directions
- Oral interpreter
- Audio test
- Braille test
- Large print test book
- Large print answer sheet
- Listening section omitted

For more information on these accommodations, visit www.ets.org/praxis/register/disabilities.

Note: Test takers who have health-related needs requiring them to bring equipment, beverages, or snacks into the testing room or to take extra or extended breaks must request these accommodations by following the procedures described in the *Bulletin Supplement for Test Takers with Disabilities or Health-Related Needs* (PDF), which can be found at https://www.ets.org/s/praxis/pdf/bulletin_supplement_test_takers_with_disabilities_health_needs.pdf.

You can find additional information on available resources for test takers with disabilities or health-related needs at www.ets.org/disabilities.

9. Do Your Best on Test Day

Get ready for test day so you will be calm and confident

You followed your study plan. You prepared for the test. Now it's time to prepare for test day.

Plan to end your review a day or two before the actual test date so you avoid cramming. Take a dry run to the test center so you're sure of the route, traffic conditions, and parking. Most of all, you want to eliminate any unexpected factors that could distract you from your ultimate goal—passing the *Praxis* test!

On the day of the test, you should:

- be well rested
- wear comfortable clothes and dress in layers
- eat before you take the test
- bring an acceptable and valid photo identification with you
- bring an approved calculator only if one is specifically permitted for the test you are taking (see Calculator Use, at http://www.ets.org/praxis/test_day/policies/calculators)
- be prepared to stand in line to check in or to wait while other test takers check in

You can't control the testing situation, but you can control yourself. Stay calm. The supervisors are well trained and make every effort to provide uniform testing conditions, but don't let it bother you if the test doesn't start exactly on time. You will have the allotted amount of time once it does start.

You can think of preparing for this test as training for an athletic event. Once you've trained, prepared, and rested, give it everything you've got.

What items am I restricted from bringing into the test center?

You cannot bring into the test center personal items such as:

- handbags, knapsacks, or briefcases
- water bottles or canned or bottled beverages
- study materials, books, or notes
- pens, pencils, scrap paper, or calculators, unless specifically permitted for the test you are taking (see Calculator Use, at http://www.ets.org/praxis/test_day/policies/calculators)
- any electronic, photographic, recording, or listening devices

Personal items are not allowed in the testing room and will not be available to you during the test or during breaks. You may also be asked to empty your pockets. At some centers, you will be assigned a space to store your belongings, such as handbags and study materials. Some centers do not have secure storage space available, so please plan accordingly.

Test centers assume no responsibility for your personal items.

If you have health-related needs requiring you to bring equipment, beverages or snacks into the testing room or to take extra or extended breaks, you need to request accommodations in advance. Procedures for requesting accommodations are described in the [Bulletin Supplement for Test Takers with Disabilities or Health-related Needs \(PDF\)](#).

Note: All cell phones, smart phones (e.g., Android® devices, iPhones®, etc.), and other electronic, photographic, recording, or listening devices are strictly prohibited from the test center. If you are seen with such a device, you will be dismissed from the test, your test scores will be canceled, and you will forfeit your test fees. If you are seen *using* such a device, the device will be confiscated and inspected. For more information on what you can bring to the test center, visit www.ets.org/praxis/test_day/bring.

Are You Ready?

Complete this checklist to determine whether you are ready to take your test.

- Do you know the testing requirements for the license or certification you are seeking in the state(s) where you plan to teach?
- Have you followed all of the test registration procedures?
- Do you know the topics that will be covered in each test you plan to take?
- Have you reviewed any textbooks, class notes, and course readings that relate to the topics covered?
- Do you know how long the test will take and the number of questions it contains?
- Have you considered how you will pace your work?
- Are you familiar with the types of questions for your test?
- Are you familiar with the recommended test-taking strategies?
- Have you practiced by working through the practice questions in this study companion or in a study guide or practice test?
- If constructed-response questions are part of your test, do you understand the scoring criteria for these questions?
- If you are repeating a *Praxis* test, have you analyzed your previous score report to determine areas where additional study and test preparation could be useful?

If you answered “yes” to the questions above, your preparation has paid off. Now take the *Praxis* test, do your best, pass it—and begin your teaching career!

10. Understand Your Scores

Understand how tests are scored and how to interpret your test scores

Of course, passing the *Praxis* test is important to you so you need to understand what your scores mean and what your state requirements are.

What are the score requirements for my state?

States, institutions, and associations that require the tests set their own passing scores. Visit www.ets.org/praxis/states for the most up-to-date information.

If I move to another state, will my new state accept my scores?

The *Praxis* tests are part of a national testing program, meaning that they are required in many states for licensure. The advantage of a national program is that if you move to another state that also requires *Praxis* tests, you can transfer your scores. Each state has specific test requirements and passing scores, which you can find at www.ets.org/praxis/states.

How do I know whether I passed the test?

Your score report will include information on passing scores for the states you identified as recipients of your test results. If you test in a state with automatic score reporting, you will also receive passing score information for that state.

A list of states and their passing scores for each test are available online at www.ets.org/praxis/states.

What your *Praxis* scores mean

You received your score report. Now what does it mean? It's important to interpret your score report correctly and to know what to do if you have questions about your scores.

Visit http://www.ets.org/s/praxis/pdf/sample_score_report.pdf to see a sample score report.

To access *Understanding Your Praxis Scores*, a document that provides additional information on how to read your score report, visit www.ets.org/praxis/scores/understand.

Put your scores in perspective

Your score report indicates:

- Your score and whether you passed
- The range of possible scores
- The raw points available in each content category
- The range of the middle 50 percent of scores on the test

If you have taken the same *Praxis* test or other *Praxis* tests over the last 10 years, your score report also lists the highest score you earned on each test taken.

Content category scores and score interpretation

Questions on the *Praxis* tests are categorized by content. To help you in future study or in preparing to retake the test, your score report shows how many raw points you earned in each content category. Compare your “raw points earned” with the maximum points you could have earned (“raw points available”). The greater the difference, the greater the opportunity to improve your score by further study.

Score scale changes

ETS updates *Praxis* tests on a regular basis to ensure they accurately measure the knowledge and skills that are required for licensure. When tests are updated, the meaning of the score scale may change, so requirements may vary between the new and previous versions. All scores for previous, discontinued tests are valid and reportable for 10 years, provided that your state or licensing agency still accepts them.

These resources may also help you interpret your scores:

- *Understanding Your Praxis Scores* (PDF), found at www.ets.org/praxis/scores/understand
- *The Praxis Passing Scores*, found at <https://www.ets.org/praxis/institutions/scores/passing/>
- State requirements, found at www.ets.org/praxis/states

Appendix: Other Questions You May Have

Here is some supplemental information that can give you a better understanding of the *Praxis* tests.

What do the *Praxis* tests measure?

The *Praxis* tests measure the specific knowledge and skills that beginning teachers need. The tests do not measure an individual's disposition toward teaching or potential for success, nor do they measure your actual teaching ability. The assessments are designed to be comprehensive and inclusive but are limited to what can be covered in a finite number of questions and question types. Teaching requires many complex skills that are typically measured in other ways, including classroom observation, video recordings, and portfolios.

Ranging from Agriculture to World Languages, there are more than 80 *Praxis* tests, which contain selected-response questions or constructed-response questions, or a combination of both.

Who takes the tests and why?

Some colleges and universities use the *Praxis* Core Academic Skills for Educators tests (Reading, Writing, and Mathematics) to evaluate individuals for entry into teacher education programs. The assessments are generally taken early in your college career. Many states also require Core Academic Skills test scores as part of their teacher licensing process.

Individuals entering the teaching profession take the *Praxis* content and pedagogy tests as part of the teacher licensing and certification process required by many states. In addition, some professional associations and organizations require the *Praxis* Subject Assessments for professional licensing.

Do all states require these tests?

The *Praxis* tests are currently required for teacher licensure in approximately 40 states and United States territories. These tests are also used by several professional licensing agencies and by several hundred colleges and universities. Teacher candidates can test in one state and submit their scores in any other state that requires *Praxis* testing for licensure. You can find details at www.ets.org/praxis/states.

What is licensure/certification?

Licensure in any area—medicine, law, architecture, accounting, cosmetology—is an assurance to the public that the person holding the license possesses sufficient knowledge and skills to perform important occupational activities safely and effectively. In the case of teacher licensing, a license tells the public that the individual has met predefined competency standards for beginning teaching practice.

Because a license makes such a serious claim about its holder, licensure tests are usually quite demanding. In some fields, licensure tests have more than one part and last for more than one day. Candidates for licensure in all fields plan intensive study as part of their professional preparation. Some join study groups, others study alone. But preparing to take a licensure test is, in all cases, a professional activity. Because a licensure exam surveys a broad body of knowledge, preparing for a licensure exam takes planning, discipline, and sustained effort.

Why does my state require the *Praxis* tests?

Your state chose the *Praxis* tests because they assess the breadth and depth of content—called the “domain”—that your state wants its teachers to possess before they begin to teach. The level of content knowledge, reflected in the passing score, is based on recommendations of panels of teachers and teacher educators in

each subject area. The state licensing agency and, in some states, the state legislature ratify the passing scores that have been recommended by panels of teachers.

How were the tests developed?

ETS consulted with practicing teachers and teacher educators around the country during every step of the *Praxis* test development process. First, ETS asked them what knowledge and skills a beginning teacher needs to be effective. Their responses were then ranked in order of importance and reviewed by hundreds of teachers.

After the results were analyzed and consensus was reached, guidelines, or specifications, for the selected-response and constructed-response tests were developed by teachers and teacher educators. Following these guidelines, teachers and professional test developers created test questions that met content requirements and [ETS Standards for Quality and Fairness](#).*

When your state adopted the research-based *Praxis* tests, local panels of teachers and teacher educators evaluated each question for its relevance to beginning teachers in your state. During this “validity study,” the panel also provided a passing-score recommendation based on how many of the test questions a beginning teacher in your state would be able to answer correctly. Your state’s licensing agency determined the final passing-score requirement.

ETS follows well-established industry procedures and standards designed to ensure that the tests measure what they are intended to measure. When you pass the *Praxis* tests your state requires, you are proving that you have the knowledge and skills you need to begin your teaching career.

How are the tests updated to ensure the content remains current?

Praxis tests are reviewed regularly. During the first phase of review, ETS conducts an analysis of relevant state and association standards and of the current test content. State licensure titles and the results of relevant job analyses are also considered. Revised test questions are then produced following the standard test development methodology. National advisory committees may also be convened to review and revise existing test specifications and to evaluate test forms for alignment with the specifications.

How long will it take to receive my scores?

Scores for tests that do not include constructed-response questions are available on screen immediately after the test. Scores for tests that contain constructed-response questions or essays aren’t available immediately after the test because of the scoring process involved. Official score reports are available to you and your designated score recipients approximately two to three weeks after the test date for tests delivered continuously, or two to three weeks after the testing window closes for other tests. See the test dates and deadlines calendar at www.ets.org/praxis/register/dates_centers for exact score reporting dates.

Can I access my scores on the web?

All test takers can access their test scores via My *Praxis* Account free of charge for one year from the posting date. This online access replaces the mailing of a paper score report.

The process is easy—simply log into My *Praxis* Account at www.ets.org/praxis and click on your score report. If you do not already have a *Praxis* account, you must create one to view your scores.

Note: You must create a *Praxis* account to access your scores, even if you registered by mail or phone.

*[ETS Standards for Quality and Fairness](#) (2014, Princeton, N.J.) are consistent with the [Standards for Educational and Psychological Testing](#), industry standards issued jointly by the American Educational Research Association, the American Psychological Association, and the National Council on Measurement in Education (2014, Washington, D.C.).

To search for the *Praxis* test prep resources
that meet your specific needs, visit:

www.ets.org/praxis/testprep

To purchase official test prep made by the creators
of the *Praxis* tests, visit the ETS Store:

www.ets.org/praxis/store

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