

Certification Study Guide

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Program Goal and Objectives

The goal of the Board of Editors in the Life Sciences is to promote excellence in manuscript editing in the life sciences. To accomplish this goal, the Board has three objectives:

- To establish a standard of proficiency for editing in the life sciences.
- To provide qualified manuscript editors in the life sciences a way to demonstrate their editorial proficiency.
- To provide employers and clients of manuscript editors in the life sciences a way to identify proficient editors.

To meet these objectives, the Board has instituted a program for testing and evaluating editorial proficiency at two levels. An editor can be certified at the first level by taking and passing a certification examination and at the second, or diplomate, level by submitting a portfolio of edited work. This booklet is a guide to the certification examination. A guide to the diplomate program is available to editors who have passed the certification examination.

For the purposes of certification, a manuscript editor is defined as an editor who is concerned both with the form and with the intellectual content of a manuscript. A manuscript editor's responsibilities include not only such matters as grammar, punctuation, and syntax but also logic, organization, consistency, and coherent development of the message.

Registration and Fee

You have been accepted into candidacy and are now eligible to sit for a BELS certification examination. With this study guide, you have received a registration form and a schedule of examinations. To sit for an examination, you must return the form with the examination fee of \$250 (US currency) to the Board before the published deadline for the examination that you choose. (The fee is \$200 if you have already taken the examination without passing during this same period of candidacy.) You remain eligible to sit for examinations for 2 years from the date of your acceptance into candidacy, and during that period, you may take the examination as often as you wish until you pass it. If by the end of that time you have not passed, you may renew your candidacy for 1 year by paying a \$50 renewal fee.

When you submit the fee and the registration form indicating your preferred date for examination, you will be registered for the examination and sent your ticket of admission to the test site.

Cancellation of Registration

Registration for each examination closes 3 weeks before the examination. If you decide not to pursue certification and notify the Board no later than 2 weeks before the date of the selected examination, \$50 of the fee will be refunded; \$25 will be refunded if you notify the Board no later than 1 week before the examination. If you fail to notify the Board and do not sit for the exam, you will forfeit the whole fee.

The Certification Examination

The certification examination tests the knowledge necessary to edit manuscripts in the life sciences. In particular, it focuses on language and substantive editing and, to a lesser extent, on editing for technical style, or copyediting. Language editing addresses the expression of ideas in clear, fluent, concise language that conforms to the conventions of standard American English (such as correct grammar, punctuation, and spelling). Substantive editing addresses the effective development and emphasis of ideas, as well as the coherence, consistency, and completeness of information in the text and in tables and figures.

The Kinds of Editing Tested

The distinctions among levels of editing are still the subject of debate. What is not debatable is that correct spelling, grammar, and syntax must concern every editor, and these are part of the certification examination. But the examination tests much more. It tests the ability to solve grammatical and syntactic problems in technically dense passages. It tests knowledge of metric units of measure, mathematical operations, author–editor interactions, publishing conventions, construction and interpretation of tables and graphs, and logical order in paragraphs.

Some style problems that typically are addressed by copyeditors are covered in the examination, but the test does not focus on copyediting skills. The ability to edit copy to conform to a journal's or publisher's style, to edit copy for a compositor, and to edit copy for routine errors in spelling, grammar, and syntax will not be sufficient to enable a candidate to pass this examination.

Examples of the kinds of questions that appear in the certification examination are provided in this booklet. Use them to judge whether you are ready to take the examination.

The Test and Test Scoring

You will be evaluated on the basis of your performance on a multiple-choice test of about 100 questions. Instructions take approximately 15 minutes, and the test lasts 2 hours and 45 minutes. The questions vary in difficulty. Roughly half are designed to be moderately difficult; the other half are divided between easy and hard. Correct answers to questions of different degrees of difficulty are awarded different numbers of points, and the examination is graded on a pass–fail basis. Because the questions are weighted for difficulty, there is no way to state the number of correct answers needed to pass. There is no scoring penalty for incorrect answers.

Note that because of its multiple-choice format, the examination does not require you to edit substantively or reorganize material as you would in a manuscript. However, there are questions that test skill in handling substantive matters, such as organization and logic. Furthermore, although the test does not require mathematical or statistical expertise, it does contain questions involving the correct presentation of such material.

The Topics Tested

Specifically, the examination tests proficiency in the following:

Grammar: use of language according to grammatical norms, for example, voice and tense of verbs, singular and plural of nouns, cases of pronouns; placement and appropriate use of adjectives, adverbs, conjunctions, prepositions, clauses, and phrases.

Punctuation: proper use and placement of punctuation marks.

Mechanics: appropriate use of, for example, capitals, italics, lists, abbreviations, and acronyms; recognition of misspellings.

Usage and diction: appropriate word choice to ensure accuracy and clarity; recognition of problems with jargon, nominalization, redundancy, vogue words, and acceptable scientific terminology; knowledge of standards of proper usage.

Syntax: recognition of correct sentence structure; ability to correct faulty structure to ensure brevity and clarity.

Organization: recognition of logical sentence order.

Internal consistency: recognition of consistency in form, usage, and logic; ability to correct inconsistencies.

Numbers: knowledge of appropriate, accurate, and consistent presentation of numerical values in text; recognition of mathematical accuracy; recognition of standard forms of mathematical presentation.

Bibliographic references: recognition of incompleteness, inconsistency, or inaccuracy of bibliographic references; recognition of adherence to a model.

Tables and illustrations: knowledge of principles of graphic presentation of data, for example, appropriate use of graphic formats; terminology for parts of tables and figures; requirements for legends, captions, notes, and credit lines.

Units of measure and scientific terms: appropriate use of common scientific terms; choice of appropriate units of measure; ability to judge the relative accuracy of data as presented in a passage; consistency in use of terms and units. (You will not be asked to convert to SI units.)

Publishing requirements: adherence to a journal's or publisher's instructions, for example, formatting references, using headings and sub-headings, and preparing tables and figures. (Knowledge of a particular style is not tested.)

Traditional principles and ethics of scientific inquiry, writing, and publishing: fair use of copyrighted material; permissions, credits, and acknowledgments; issues of multiple authorship; ethical principles and procedures in animal and human experimentation.

Sample Test Questions

The following sample test questions will give you an idea of what to expect on the certification examination. Answer all the questions first and then check your answers against those given in the section that follows. The answers include explanations of the reasoning behind the correct choices.

Paragraph for Questions 1 and 2

Perhaps the most dramatic natural factor ① *effecting* budworm populations is weather. Several investigators have found that periods of warm, dry weather have ② *preceded* major outbreaks. Weather may also cause short-term reduction in populations. ③ *Unreasonable* fall or spring frosts can act directly by freezing larvae or indirectly by destroying the food supply. In 1969, early June temperatures ④ *plummeted* in ⑤ *western* Montana when budworm larvae were actively feeding on newly developed foliage. Populations were reduced by nearly 90 percent. But despite the destruction of populations by the frost, the ⑥ *effect* was short lived: by 1972, populations resurged to nearly pre-1969 densities. Long periods of warm weather in the fall ⑦ *replete* nutritional reserves in hibernating larvae and, after ⑧ *emergence*, they may be too weak to break and penetrate needle or buds. Starvation also causes mortality during prolonged outbreaks.

1. In which of the following pairs are **BOTH** words used **INCORRECTLY**?

- (A) ① and ⑧
- (B) ① and ③
- (C) ② and ④
- (D) ④ and ⑦

2. In which of the following pairs are BOTH words used CORRECTLY?

- (A) ② and ⑤
- (B) ③ and ⑥
- (C) ③ and ⑦
- (D) ⑤ and ⑦

3. When submitting a photograph of an identifiable person for publication, the author must

- (A) include a copy of a release form signed by the person.
- (B) ensure that the person's full name is placed on the photograph itself and spelled correctly.
- (C) obtain the permission of any other professional involved in the treatment of this person.
- (D) obtain a copyright for the photograph.

4. Bq (becquerel) is most similar to

- (A) Ci (curie)
- (B) C (coulomb)
- (C) cal (calorie)
- (D) cd (candela)

Sample Test Questions

5. $\frac{A - B}{C + A} \times 100$ can be written as

(A) $A \div C - B \div A \times 100$

(B) $A - B \times 100 \div C + A$

(C) $[(A - B) \div (C + A)] \times 100$

(D) $A - (B \div C) + A \times 100$

Paragraph for Questions 6 and 7

The San Juan Islands, situated in the rain shadow of the Olympic Mountains and, as a result, include some of the driest sites encountered in western Washington. However, because of highly variable topographical configuration and aspect, most islands possess a surprisingly diverse assemblage of plant communities ranging from very dry to very moist types. South-facing slopes that receive the full force of prevailing dry winds in the summer months are occupied by grassland vegetation and scattered trees. Sheltered south slopes are not exposed to the drying effects of the summer winds and therefore support closed forests, mostly of *Pseudotsuga menziesii* and *Arbutus menziesii*.

6. Choose the correct substitution for the first underlined passage.

(A) "Mountains and as a result include"

(B) "Mountains, include"

(C) "Mountains include"

(D) No change necessary

7. The second underlined passage

- (A) is a phrase, not a clause.
- (B) should be set off from the rest of the sentence by commas.
- (C) is a nonrestrictive clause.
- (D) is a restrictive clause.

8. The timing of individual cilium assemblage depends on the position of the particular blastomere along the animal-vegetal axis (Masuda 1979), the blastomeres in the animal hemisphere, which give rise exclusively to ectodermal derivatives, are first to form cilia, at the eighth or ninth cleavage. One cleavage cycle later, the blastomeres in the vegetal hemisphere, which give rise to both ectodermal and endodermal derivatives, form their cilia.

Choose the best substitute for the underlined passage.

- (A) “(Masuda 1979); the blastomeres”
- (B) “(Masuda 1979), thus the blastomeres”
- (C) “(Masuda 1979); since the blastomeres”
- (D) Leave as is.

9. The dosage of drug used affected neither the course of tumor appearance nor the incidence of papillomas, nor the overall mortality, nor the magnitude of weight loss.

Which is the best rewrite of the above sentence?

Sample Test Questions

- (A) "The dosage of drug used affected neither the course of tumor appearance, nor the incidence of papillomas, nor the overall mortality, nor the magnitude of weight loss."
- (B) "The dosage of drug used did not affect either the course of tumor appearance or the incidence of papillomas or the overall mortality or the magnitude of weight loss."
- (C) "The dosage of drug used did not affect the course of tumor appearance, the incidence of papillomas, the overall mortality, or the magnitude of weight loss."
- (D) No rewrite necessary.

10. The manner in which the patients are received, the thoroughness to their individual needs, and the enthusiasm by all members of the staff play a part in making this a world-class medical center.

Which revision of the underlined passage conveys the author's intended meaning most clearly?

- (A) "the staff's thorough attention to their individual needs, and the enthusiasm evident among them"
- (B) "their thorough attention to their individual needs, and our enthusiasm with all members of the staff"
- (C) "the thoroughness of their individual needs, and the enthusiasm of all members of the staff"
- (D) "the careful attention paid to their individual needs, and the enthusiasm among all members of the staff"

11. In an organism there may be a continuum of responses to a noxious agent, extending from responses that lead to removal of the agent or repair of initial injury to responses that indicate that irreversible pathologic change has occurred or is destined to occur at a later time. Markers are needed to indicate what stage in this continuum of effects has occurred.

Select the best wording for the last sentence.

- (A) "Markers are needed to indicate what sort of damage has occurred."
- (B) "Markers are needed to indicate where along the continuum a particular response lies."
- (C) "Markers are needed to indicate what stage of damage has occurred."
- (D) Leave as is.

12. All plants support populations of nonpathogenic microorganisms on (epiphytically) their external structures and within (endophytically) their tissues.

Choose the best revision of the underlined passage.

- (A) Correct as is.
- (B) "on their external structures (e.g., epiphytically) and within their tissues (e.g., endophytically)."
- (C) "epiphytically on their external structures and endophytically within their tissues."
- (D) "epiphytically (on their external structures) and endophytically (within their tissues)."

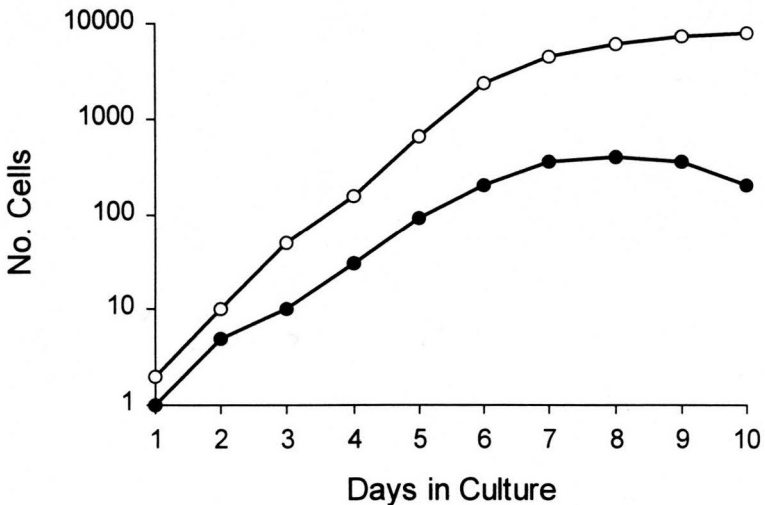
Sample Test Questions

13. However, there was a significant difference in the frequency of caval venous pressure line usage according to both the position of the patient and the type of surgical procedure.

Choose the most appropriate editorial response regarding “significant difference.”

- (A) Ask author, “How different is the significance?”
- (B) After “significant” insert “(P < 0.05).”
- (C) Ask author, “Do you mean statistically significant? If so, please support claim.”
- (D) Substitute “substantial” for “significant.”

Graph for Questions 14 and 15



14. Which of the following editorial revisions would NOT be correct?

- (A) Change the abbreviation “No.” in the vertical axis to “Number of.”
- (B) Add a key explaining the variable that each line represents.
- (C) Change the labels on the vertical axis to read 1, 10, 102, 103, 104.
- (D) Change “10000” to “100000” on the vertical axis.

15. The tick mark labels on the vertical axis indicate

- (A) use of a logarithmic scale.
- (B) improper compression of data.
- (C) that the horizontal scale should be renumbered to match.
- (D) that the number of cells rises each day.

Questions 16–20 refer to the passage below.

[A] Patients with rheumatic complaints comprise much of any primary care physician’s practice. [B] Many patients continue to have pain and limited function and require some other forms of treatment. [C] Since the reports by Hollander¹ and Hollander et al.² in the 1950s, the injection of steroid compounds into joints and soft tissues has been widely used and accepted as therapeutic. [D] Physicians and patients alike want to know the likelihood of such an injection’s causing harm or benefit; this study seeks to answer patients’ questions; “Will this help?” [E] Tables 1 and 2 give the results of the injections as evaluated by the patients after two weeks. [F] Three hundred twenty consecutive patients received 381 injections of steroid with lidocaine into a wide variety of joint and soft-tissue sites over a two-year period. [G] After two weeks, responses in 98.5% of patients were generally good

Sample Test Questions

to excellent. [H] Our study demonstrates that well-localized musculo-skeletal pain responds to injections without steroid and lidocaine.

16. For sentence [A], which is the MOST satisfactory revision?

- (A) No revision necessary.
- (B) "Much of any primary care physician's practice composes patients with rheumatic complaints."
- (C) "Patients with rheumatic complaints are comprised of much of any primary care physician's practice."
- (D) "Much of any primary care physician's practice comprises patients with rheumatic complaints."

17. For sentence [B], which is the MOST satisfactory revision?

- (A) No revision necessary.
- (B) "Many patients, who continue to have pain and limited function, require some other forms of treatment."
- (C) "Many patients continue to have pain and limited function who require some other forms of treatment."
- (D) "Many patients continue to have pain and limited function that require some other forms of treatment."

18. For sentence [C], which is the MOST satisfactory revision?

- (A) No revision necessary.
- (B) "Since the reports by Hollander^{1,2} in the 1950s"
- (C) "Since the reports by Hollander and colleagues^{1,2} in the 1950s"
- (D) "Since the report by Hollander¹ and the one by Hollander et al.² in the 1950s"

19. For sentence [D], which is the MOST satisfactory revision?

- (A) No revision necessary.
- (B) “Physicians and patients alike question the probable benefit or harm of local steroid injection and ask ‘Will this help?’ ”
- (C) “Physicians and patients alike question the probable benefit or harm of local steroid injection. This study seeks to answer patients’ question, ‘Will this help?’ ”
- (D) “Physicians and patients alike want to know whether this treatment will benefit or harm the patient; this study seeks to answer that question.”

20. For sentence [H], which is the MOST satisfactory revision?

- (A) No revision necessary.
- (B) “Our study demonstrates that well-localized musculoskeletal pain responds to steroid injections without lidocaine.”
- (C) “Our study shows that well-localized musculoskeletal pain responds to lidocaine injections with steroid.”
- (D) “Our study shows that well-localized musculoskeletal pain responds to steroid injections with lidocaine.”

Question 21 refers to the sentence below.

Each of these extremes are tempered by their opposites.

21. The sentence contains an error in

- (A) logic.
- (B) number.
- (C) parallel construction.
- (D) spelling.

Question 22 refers to the example below.

Peterson, D.R., Van Belle, G., and Chinn, N.M.: Epidemiologic comparisons of the sudden infant death syndrome with other major components of infant mortality. Am. J. Epidemiol. 1979; 110:699-735.

22. Which of the following references conforms to the style of the example?

- (A) Peterson, D. R., Sabotta, E. E., Daling, J. R. Infant mortality among subsequent siblings of infants who died of sudden infant death syndrome. Journal of Pediatrics 1986; 103: 911.
- (B) Shannon, D.C., and Kelly, D.H.: SIDS and near-SIDS (parts I and II). N. Engl. J. Med. 1982; 306:959-1022.
- (C) Chavez, C.J., Ostrea, E.M., Styker, J.C., et al. Sudden infant death syndrome among infants of drug-dependent mothers. J. Pediatr. 1979; 95:407-409.
- (D) Spiers, P.D.: Estimated rates of concordancy for the sudden infant death syndrome in twins. Am. J. Epidemiol.,1974; 100: 1-6.

Answers and Explanations

Answer to Question 1: Option B is the correct answer because both ① *effecting* and ③ *unreasonable* are incorrectly used. The correct word choice for ① *effecting* is *affecting* because one can change or alter a population but not cause it to come into being. The correct word choice for ③ *unreasonable* is *unseasonable*. The question of timing (the seasonableness of the frost) is clearly implied by the words *fall or spring* and the following sentence, describing a June freeze. Both show that the question of severity or unreasonableness is not the issue. In the other options, at least one of the two words is correctly used.

Answer to Question 2: Option A is the correct answer because both ② *preceded* and ⑤ *western* are used correctly. Some might believe, by false analogy with the word *proceeded*, that *preceeded* would be the correct spelling. Others might believe that ⑤ *western* should have an initial capital letter, but in cases of simple direction, a lowercase letter is correct. Options B and C must be rejected because, as explained above, ③ *unreasonable* is incorrect. Of course, ⑥ *effect* is the correct word choice when the noun for a result is appropriate. Option D must be rejected because ⑦ *replete* is an adjective or, in entomology, a noun but not a verb; the appropriate form of the word would be the verb *replenish*, but *replenish* is not a logical choice in this context.

Answer to Question 3: Only one of the four options is required: option A, a signed release form. This is necessary to protect the author and the publisher from violating a person's right to privacy. Option B, in medical literature, is directly contrary to the intention of confidentiality; in nonmedical literature, it might be irrelevant. Option C might be advisable in some institutions but is not a subject of publishing ethics or law; and option D is entirely at the discretion of the photographer, not the author of the paper.

Answer to Question 4: Option A is the correct choice because Bq is the SI unit most closely corresponding to Ci; they are both measures of radioactivity. The other three abbreviations—C, cal, and cd—are superficially similar but measure entirely different physical quantities—electricity, heat, and light.

Answer to Question 5: The correct answer is option C. The question is intended to evaluate the ability to reduce two-line equations to a single line, which is simpler and more economical to print. Arithmetic operations are performed from left to right in the following order: (1) operations within inclusions (parentheses, brackets, division bars), (2) multiplication and division, (3) addition and subtraction. In the question as written, the division line of the fraction is an inclusion, so the operations within the numerator and denominator are performed first. Then the numerator is divided by the denominator, and the result is multiplied by 100. Of the possible answers, only option C gives the same result as the equation in the question.

In option A, the operations are performed in order from left to right, top to bottom without regard for inclusions or kinds of operations. In option B, the operations are performed left to right across the top and then left to right across the bottom, without regard for inclusions or order of operations. In option D, the inclusion function of the division line is ignored.

Answer to Question 6: The correct answer is option B. Because it lacks the closing comma of the parenthetical phrase beginning *situated*, option C is incorrect. Option A eliminates superfluous commas around *a result*, but it does not cure the jumbled syntax of the underlined phrase. Option D is similarly incorrect.

Answer to Question 7: The correct answer is option D. Option A is wrong because the underlined passage has both a subject (*that*) and a predicate (*receive*) and therefore is a clause. It must be restrictive because we know from the following sentence that some south-facing slopes are not exposed to drying winds, so option C is wrong. Restrictive elements are not set off from the rest of the sentence by commas, so option B is wrong.

Answer to Question 8: The correct answer is option A. It separates the two independent clauses with a semicolon; other ways of separating independent clauses are possible, but none of them is among the options. Option C might appear to be correct, in that it, too, separates the clauses with a semicolon. However, the insertion of *since* makes the second clause a dependent clause, and so the use of a semicolon becomes incorrect. The *thus* of option B does not change the requirement to use a conjunction or stop between the two independent clauses.

Answer to Question 9: Option C is the best rewrite of the sentence. It changes the conjunction so that the reader is not surprised that there are more than two choices for what the drug does not affect, avoids the choices set up by *either*, reserves the *or* for the last item in the series, and properly places commas between the items in the series. The original sentence repeats the disconcerting conjunction *nor* and is missing one comma; option A is properly punctuated but uses the same conjunctions, and option B changes the conjunctions but maintains the repetition.

Answer to Question 10: The skeleton of meaning in the original sentence can be discerned, in spite of unclear referents. Option A makes that meaning more obvious, but the referents for *their* and *them*

Answers and Explanations

are unclear. Option B heightens the uncertainty about referents, and option C heightens the nonsensical nature of the text. Only option D is sensible and free of unclear referents.

Answer to Question 11: The syntax of the last sentence is jumbled, so option D cannot be correct. Option B is the only one that both corrects the syntax and preserves the original meaning. In option A, the syntax is correct, but the meaning of the original—placement in the continuum—is lost. In option C, the syntax is correct, but the meaning of the original is lost—stage of damage was not an issue in the original.

Answer to Question 12: The question is where to place the explanation of a term. In the underlined text, the term appears in parentheses and its meaning is part of the running text. Though in some contexts this subordination would be appropriate, the placement of the parenthetical term distorts its meaning, suggesting that the two terms mean simply “on” and “within” when, in fact, the words mean “on the plant” and “within the plant.” Option B distorts the meaning, in that the use of *e.g.* suggests that *epiphytically* and *endophytically* are merely examples of words that you might use here. Option C runs the definition and the term together, as though they were not synonymous. Option D properly identifies and places the parenthetical phrases.

Answer to Question 13: Option C is the best choice here. Option A is nonsensical. Option B presumes that the editor not only knows that the author means significant in the statistical sense but also knows the level of significance. Option D presumes that the editor knows that the author does not mean significant in the statistical sense. Without direct evidence from elsewhere in the manuscript, the editor can only ask the author what he or she means and to provide support for the conclusion if statistical significance is meant.

Answer to Question 14: The correct answer is option D. Changing 10000 to 100000 would violate the correct sequence in the logarithms. The other three options all would be correct editorial changes. Option C represents a method for labeling logarithms often preferred for its simplicity. Option B would be essential to the reader's understanding of the graph, which should be comprehensible without reference to accompanying text. Option A would establish consistency with the style of the horizontal axis and avoid any confusion of the word *no* with the abbreviation for *number*.

Answer to Question 15: The correct answer is option A. Option B is incorrect; logarithms are used as a means of compressing data. Option C is incorrect because this is a semilog graph; the increments on the horizontal axis are supposed to be arithmetic and equal, whereas those on the vertical axis are intended to be logarithmic and unequal. Option D is obviously incorrect, not only because it is the lines on the graph and not the tick marks on the axes that show changes in variables but also because the lines as drawn indicate a leveling off or falling off after day 7.

Answer to Question 16: The correct answer is option D because the whole comprises the parts. Option A is incorrect because the sentence does require revision. The active voice in option B renders *composes* incorrect, as does the passive voice (*are comprised of*) in option C.

Answer to Question 17: The correct answer is option A. Option B incorrectly restricts the clause (*patients who continue to have pain and limited function*), as does option D (*pain and limited function that require*). Option C is problematic because *who* appears to refer to *pain and limited function* instead of patients.

Answers and Explanations

Answer to Question 18: The correct answer is option A. Option B is not a good choice because Hollander's colleagues are omitted. Option C is not a good choice because it does not differentiate between reports by Hollander alone and by Hollander and others. Option D, although it accurately identifies the reports' authors, is far wordier than necessary.

Answer to Question 19: The correct answer is option D. Option A is incorrect because the sentence is wordy and improperly punctuated. Option B is lacking a comma before 'Will this help?' and omits mention of the study. Option C is unnecessarily wordy.

Answer to Question 20: The correct answer is option D. Option A is incorrect because the injections consisted of steroid with lidocaine. Option B similarly describes the injections incorrectly as *without lidocaine*; also, the lengthy word *demonstrates* in option B can be replaced with the much shorter word *shows*. Option C is inaccurate because the primary medication in the injection was the steroid, with lidocaine being secondary.

Answer to Question 21: The correct answer is option B. *Each* is singular and requires a singular verb (*is* instead of *are*), a singular pronoun (*its* instead of *their*), and a singular object (*opposite* instead of *opposites*). Option A is incorrect because the sentence would make sense if the number problems were corrected. Option C is incorrect because the sentence is not a parallel construction. Option D is incorrect because all words in the sentence are spelled properly.

Answer to Question 22: The correct answer is option B. Option A is incorrect because of the missing *and* before the last author's name and the period (instead of a colon) after the authors' names; also the journal title is written out in full, no punctuation separates the journal title from the year, and only the starting page number of the article is provided. Option C is incorrect because it has a period (instead of a colon) after the authors' names, and it lacks the *and* before the last author's name. Option D is incorrect because the journal title is not in italics, a comma follows the period after the journal title, and an extra space appears before the article page numbers.

Test-Taking Hints

The test is divided into three sections. The three sections are roughly equal in difficulty and will require roughly the same amount of time to complete. Each section contains some questions that are longer and take more time to answer than others. You should have sufficient time if you pace yourself and work methodically. You may answer the questions in any order; you do not need to finish one section before proceeding to the next, and you may go back and forth between sections.

About half the questions are designed to be moderately hard; the others are evenly divided between easy and hard. You might want to scan the whole test and answer first the questions that are easy for you, then return to answer the harder ones. **If you answer questions out of order, you should take special care to match the number of each question to the number of its answer on the answer sheet.**

When several questions all concern one long passage, you might read the questions through first before reading the passage, to save yourself the time that it would take to consider issues in the passage that are not relevant to the questions.

As you will have seen in the sample test questions, you will be asked to choose the **BEST** listed answer for each question. Sometimes other possible answers are grammatically correct but are not the best. Remember that in editing, context is important. A particular question might have no best answer out of context but have an answer that becomes clear in context.

Preparation for the Examination

Your daily work as an editor is your best preparation. However, if you are uncertain about particular elements of editorial practice, you might find it helpful to take courses in editing and scientific writing offered by some colleges and universities or to complete workshops like those offered by schools of journalism and publishing, by professional organizations of editors, and by editorial businesses and consultants. In addition, systematic preparation in those elements with the following reference books might be helpful.

American Medical Association. *Manual of Style: A Guide for Authors and Editors*. 10th ed. New York, NY: Oxford University Press; 2007.

American Psychological Association. *Publication Manual*. 5th ed. Washington, DC: American Psychological Association; 2001.

Council of Science Editors Style Manual Committee. *Scientific Style and Format: The CSE Manual for Authors, Editors, and Publishers*. 7th ed. Reston, VA, and New York, NY: Council of Science Editors and The Rockefeller University Press; 2006.

Day RA. *Scientific English: A Guide for Scientists and Other Professionals*. Phoenix, AZ: Oryx Press; 1992.

Day RA, Gastel B. *How to Write and Publish a Scientific Paper*. 6th ed. Westport, CT: Greenwood Press; 2006.

Huth EJ. *Writing and Publishing in Medicine*. 3rd ed. Baltimore, MD: Williams & Wilkins; 1999.

Preparation for the Exam

Lang TA, Secic M. *How to Report Statistics in Medicine*. 2nd ed. Philadelphia, PA: American College of Physicians; 2006.

Minick P. *Biomedical Communication: Selected AMWA Workshops*. Bethesda, MD: American Medical Writers Association; 1994.

Schwager E. *Medical English Usage and Abusage*. Phoenix, AZ: Oryx Press; 1991.

Stedman's Abbreviations, Acronyms & Symbols. 3rd ed. Baltimore, MD: Lippincott Williams & Wilkins; 2003.

Strunk W Jr, White EB. *The Elements of Style*. 3rd ed. New York, NY: Macmillan; 1979.

University of Chicago Press. *The Chicago Manual of Style*. 15th ed. Chicago, IL: University of Chicago Press; 2003.

Witte FM, Taylor ND. *Essays for Biomedical Communicators: Volume 2 of Selected AMWA Workshops*. Bethesda, MD: American Medical Writers Association; 1997.

Zeiger M. *Essentials of Writing Biomedical Research Papers*. 2nd ed. New York, NY: McGraw-Hill; 2000.

Of course, many helpful books do not appear on this list. You probably already know and use books on language and usage, as well as style manuals associated with particular fields.

Examination Procedure

You must bring your ticket of admission to the examination room with a photo identity card, such as a driver's license. Your name will be checked against the list of registered candidates and your identity against your photo identity card. If both checks correspond, you will be admitted to the room and given a copy of the examination, an answer sheet, and lead pencils. The code number of your answer sheet and examination will be recorded by your name on the list of registered candidates.

You must not open the examination booklet until a proctor signals the beginning of the examination period. Similarly, you must not put any marks on the answer sheet after a proctor signals the end of the examination period.

Additional sharpened pencils are available if needed.

You may not use any reference book or computer during the examination, but you may bring and use a calculator. It must be a calculator only and not one with word-storage electronics. Also, several calculators are provided for candidates' use during the test.

Proctors will be available to assist you in any emergency. They may answer candidates' questions about the test format and procedure. However, they may not answer any questions about the content of the examination or about the intent or phrasing of a particular item or give any response that might bias the examination results.

Examination Procedure

If you need to leave the room to go to the restroom during the examination period, insert your answer sheet into the examination booklet, close the booklet, and take it to the proctor at the front of the examination room. The proctor will keep it until you return.

When you have finished the examination, you may leave the examination room. You may not return.

You may not remove any portion of the examination or answer sheet from the examination room.

You may not receive assistance from anyone in choosing an answer to any examination question.

Any person who attempts to take the examination for another or who enlists the aid of another in taking the examination will be permanently barred from eligibility. If the fraud is discovered after the examination is completed or after certification is issued, certification will be withdrawn and future eligibility barred.

Accommodations for Registrants with Disabilities

If you have a disability requiring accommodation under the Americans with Disabilities Act, contact the Registrar no later than 6 weeks before the examination you plan to take. You will be sent a form to complete.

Appealing a Failing Score

Any candidate who has a **specific grievance that is related to the examination itself** can send a written appeal to the BELS Councilor for Appeals. Written appeals must be sent to the Board office within 30 calendar days of receiving notice of the result that the candidate wishes to appeal.

Because BELS does not certify editors based on experience alone, we do not accept background and skills documents as a substitute for a passing Certification Examination score. Further, to maintain the integrity of the examination, BELS does not analyze individual tests or provide feedback to candidates.

Appeals are reviewed by the Appeals Committee; an appeal not resolved at that level is evaluated by the Executive Council of BELS.

A Final Word

Arrange your travel to the test site so that you can arrive well ahead of time and can be rested and calm for the examination. The examination is designed to test your skill and working knowledge of scientific editing, not to test you for feats of memory or for encyclopedic knowledge of detail. Come to the examination ready to draw on your editorial experience. We look forward to welcoming you to the company of certified editors in the life sciences.

**For updated schedules of tests visit the BELS Web site at
<http://www.bels.org>.**

Notes
