



California  
Subject  
Examinations for  
Teachers®

# TEST GUIDE

## PRELIMINARY EDUCATIONAL TECHNOLOGY SUBTEST I

### Sample Questions and Responses and Scoring Information

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## **Sample Test Questions for CSET: Preliminary Educational Technology Subtest I**

Below is a set of multiple-choice questions and constructed-response questions that are similar to the questions you will see on Subtest I of CSET: Preliminary Educational Technology. You are encouraged to respond to the questions without looking at the responses provided in the next section. Record your responses on a sheet of paper and compare them with the provided responses.

1. The primary benefit of saving a word-processing document in a text-only format is that it allows the file to be:
  - A. transferred as an e-mail attachment.
  - B. compressed by a utility program.
  - C. imported into a database.
  - D. opened by any word processor.
  
2. In order for a teacher to use a school's secure local area network, it is necessary that the teacher:
  - A. have an account created by the network administrator.
  - B. understand the network operating system's command structure.
  - C. understand how to navigate the network drives.
  - D. have a dedicated workstation that provides access only to the teacher.
  
3. A classroom computer periodically freezes. Which of the following pieces of information is most important to relay to the technical support staff to best help them solve the problem?
  - A. how many other teachers use the same computer
  - B. what programs were being used when the computer froze
  - C. the number and type of peripherals attached to the computer
  - D. the types of software applications installed on the computer
  
4. While working on a local area network, a teacher encounters a message saying that a certain network drive/volume is not available. This message is referring to a:
  - A. software program.
  - B. group e-mail address.
  - C. location for storing information.
  - D. connection to the Internet.

5. Which of the following is allowed by most single-user software licenses?
- A. making a backup copy of the software
  - B. allowing teachers to make copies for class use
  - C. installing the software on a network server
  - D. making copies for use by nonprofit organizations
6. It is most important to scan a computer's drives for viruses immediately after:
- A. installing software from a disk created by a friend.
  - B. defragmenting a computer's hard disk.
  - C. downloading a text file from a government Web site.
  - D. shutting down a computer improperly.
7. Which of the following best describes the significance of the Children's Internet Protection Act of 2000?
- A. It provides procedures for tracking and monitoring Internet use by minors in schools.
  - B. It restricts the types of software that can be purchased and installed on school computers.
  - C. It requires all schools to have Internet filters in place in order to receive federal support.
  - D. It specifies the types of Internet activities that can be performed by students in schools.
8. A teacher wants to present a class project on a page of the school's Web site. Which of the following is most important for the teacher to consider before publishing the Web page?
- A. Photographs of students may not be included on a school Web page.
  - B. The school principal must approve all content that is to be included on the Web page.
  - C. Students must agree to have their work published on the Web page.
  - D. Parents/guardians must give consent for any student to be identified on the Web page.

Use the information below to answer the two questions that follow.

<i>Electronic Learning Media Database</i>		
<b>Subject</b>	<b>Name/Grade Level</b>	<b>Type</b>
Social Studies	Santa Fe Trail: Grades 4–8	Simulation
Language Arts	Write and Revise: Grades 7–9	Tutorial
Mathematics	Number Fun: Grades K–3	Drill and Practice

The diagram above represents several entries in a database.

9. Which of the following terms describes the horizontal rows of the database?
- A. field
  - B. record
  - C. hypertext
  - D. worksheet
10. Which of the following best describes an advantage of dividing the second column of the database into two columns: a **Name** column and a **Grade Level** column?
- A. The names of the software products can be edited and revised.
  - B. The database can be enlarged by adding more software titles.
  - C. The database can be sorted by grade level.
  - D. The database will require less computer system memory.

11. Students are planning a budget for a school fundraising event. Which of the following is the most significant benefit of having students use a spreadsheet application to create the budget?
- A. A variety of different objects can be inserted into a file.
  - B. Numerical data can be displayed in either rows or columns.
  - C. Files can be converted to a portable document format.
  - D. Data can be modified to compare a variety of different situations.

12. Which of the following is an important design principle to follow when creating Web pages?
- A. The background should be similar in color to the text being used on the page.
  - B. The size of the image files should be as small as possible to reduce the time it takes for the pages to load.
  - C. As much text as possible should be placed on each page to reduce the time spent navigating.
  - D. Blinking text and animated images should be used as much as possible to emphasize important content.

13. A teacher is sending an e-mail message that has a spreadsheet document attached. To open the attachment, the recipient must have:
- A. the same e-mail program as the teacher.
  - B. the same operating system as the teacher.
  - C. virus-protection software installed.
  - D. a program that is compatible with the file being sent.
14. For which of the following purposes is it most appropriate to use an Internet discussion group?
- A. to participate in real-time discussions online
  - B. to ask questions and provide information on a specific topic
  - C. to ensure that posted information is authoritative and accurate
  - D. to find an index of Web sites addressing a specific topic
15. Which of the following best describes one of the objectives of the California Learning Resource Network (CLRN)?
- A. to identify and review supplemental electronic learning materials
  - B. to provide technical support for maintaining school networks
  - C. to provide assistance in writing grants for instructional technology
  - D. to develop a cooperative for purchasing software at bulk rates

## Constructed-Response Assignment Directions

For each constructed-response assignment in this section, you are to prepare a written response of approximately, but not limited to, 75–125 words on the assigned topic.

Read each assignment carefully before you begin to write. Think about how you will organize what you plan to write.

Your responses will be evaluated based on the following criteria.

**PURPOSE:** the extent to which the response addresses the constructed-response assignment's charge in relation to relevant CSET subject matter requirements

**SUBJECT MATTER KNOWLEDGE:** the application of accurate subject matter knowledge as described in the relevant CSET subject matter requirements

**SUPPORT:** the appropriateness and quality of the supporting evidence in relation to relevant CSET subject matter requirements

The assignments are intended to assess subject matter knowledge and skills, not writing ability. Your responses, however, must be communicated clearly enough to permit a valid judgment of your knowledge and skills. Your responses should be written for an audience of educators in the field.

Your responses should be your original work, written in your own words, and not copied or paraphrased from some other work. You may not use any reference materials during the testing session. Remember to review your work and make any changes you think will improve your responses.

16. Use the spreadsheet below to complete the exercise that follows.

	A	B	C	D	E	F	G
1	<b>Student Name</b>	<b>Test 1</b>	<b>Test 2</b>	<b>Test 3</b>			
2							
3	Smith, Anna	86	76	80			
4	Torres, Emile	95	90	85			
5	Estaban, Isabella	79	84	90			
6	Fraiser, Clint	71	75	80			
7	Chan, Kevin	76	88	85			
8							
9							
10							
11							
12							

Using your knowledge of spreadsheet software and the excerpt of a spreadsheet above, write a response in which you discuss the use of formulas in spreadsheets. In your response:

- describe two significant benefits of using formulas in a spreadsheet; and
- explain the significant steps necessary to modify the spreadsheet above so that the average test grade for each student is displayed.



17. **Complete the exercise that follows.**

Using your knowledge of methods for searching for information on the Internet or in a database, write a response in which you discuss search strategies. In your response:

- describe the type of results that will be returned when combining two terms using the search operator OR, such as *instructional OR software*; and
- discuss the type of results that will be returned when combining two terms using the search operator AND, such as *instructional AND software*.

## Annotated Responses to Sample Multiple-Choice Questions for CSET: Preliminary Educational Technology Subtest I

### Basic Operations, Concepts, and Issues of Computer-Based Technology

1. **Correct Response: D.** (SMR Code: 1.1) Word-processing software uses custom codes to save a document's formatting. One word-processing program may not be able to interpret the custom codes used by a different word-processing program. Saving a document in a text-only format removes the custom codes and allows a file to be read by any word processor.
2. **Correct Response: A.** (SMR Code: 1.1) For security reasons, access to a school's secure local area network is controlled by the school's network administrator. The network administrator creates each teacher's account and issues the teacher a user name and password that allow the teacher access to the network.
3. **Correct Response: B.** (SMR Code: 1.2) Periodic computer freezing or crashing is usually caused by faulty code in a computer program or by a conflict or incompatibility between the program and the computer's operating system. It is easier for the technical support staff to troubleshoot and identify a problem if they know which programs were running on the computer when it froze.
4. **Correct Response: C.** (SMR Code: 1.2) A network drive/volume is a data-storage device on a network. If the network drive is unavailable and cannot be accessed for reading or writing data, a message indicating the drive's unavailability is usually sent to the computer monitor.
5. **Correct Response: A.** (SMR Code: 1.3) Most single-user software licenses allow the owner of the license to install the software on one computer. In addition, the owner is allowed to make a single copy of the software solely for backup or archival purposes.
6. **Correct Response: A.** (SMR Code: 1.3) A computer virus can be hidden in the files of a software program. Installing software from a disk created by a friend could transfer a virus from the friend's computer files to your computer files. If there is any possibility that an installed program could contain a virus, it is essential to scan the computer's hard disk to detect and remove any virus that may have been acquired.
7. **Correct Response: C.** (SMR Code: 1.4) In order for schools to receive federal support, the Children's Internet Protection Act of 2000 requires them to develop and implement an Internet safety policy for students accessing the Internet on school computers. The Internet safety policy must include the use of filtering or blocking technology to protect students from accessing obscene or objectionable material on the Internet.
8. **Correct Response: D.** (SMR Code: 1.4) In accordance with California Education Code Section 49060 et seq., a school's Internet safety policy must require that a student's parent or guardian give his or her consent before the student can be identified on the school's Web page.

## Productivity Applications of Computer-Based Technology

9. **Correct Response: B.** (SMR Code: 2.1) The Electronic Learning Media Database diagram shows a table in which related information is presented horizontally. A database record is a collection of related information. Therefore, each horizontal row in the table represents a database record.
10. **Correct Response: C.** (SMR Code: 2.1) The ability to sort information is one of the greatest advantages of using a database. Database fields can be searched, sorted, and recombined using a variety of commands. Creating separate fields for Name and Grade Level will allow the user to sort or search the database by either grade level or name, in addition to subject or type.
11. **Correct Response: D.** (SMR Code: 2.2) A spreadsheet application can be used to analyze numerical data. Data and formulas entered into a spreadsheet can be modified to investigate different scenarios. This capability allows the user to explore how changing data in various cells of the spreadsheet will affect the final result, such as how changing the costs or sales could affect the budget of a school fundraising event.
12. **Correct Response: B.** (SMR Code: 2.2) A Web page that loads quickly is an important Web design principle. Digital image files can be large and a Web page containing several large image files can take a long time to load, even on a computer with a fast Internet connection. Reducing the size of the image file will decrease the time it takes a computer to display the elements of a Web page.
13. **Correct Response: D.** (SMR Code: 2.3) An e-mail attachment is a convenient way to share a file with another individual. However, in order to open an attached file, the recipient of the attachment must have a computer program installed on his or her computer that is compatible with the program used to create the attached file.
14. **Correct Response: B.** (SMR Code: 2.3) An Internet discussion group allows individuals to read and post messages to an Internet site that can be accessed by others. Discussion groups are usually organized around a specific topic. Messages posted to a discussion group message board are displayed in an organized manner that makes it easy for others to read and post responses. Individuals use these discussion groups to share information and ask questions about the discussion group topic.
15. **Correct Response: A.** (SMR Code: 2.4) The California Learning Resource Network (CLRN) provides teachers with an online information depository designed to help educators implement the California curriculum frameworks and learning standards. One of the stated objects of the CLRN is to maintain an interactive Web site to provide information about electronic learning resources through an online searchable database.

## Examples of Strong Responses to Sample Constructed-Response Questions for CSET: Preliminary Educational Technology Subtest I

### Productivity Applications of Computer-Based Technology

#### Question #16 (Score Point 3 Response)

The use of formulas in spreadsheets provides the user with several benefits. First, the spreadsheet will do the math for the user automatically. For example, once a sum formula has been entered, the user can see, at a glance, totals for columns or rows. Second, as data is added to or changed in the existing spreadsheet, the formula automatically updates the sums or averages without any added work on the user's part. So, if the user adds new test scores, for example, the average for each student will be adjusted to include the new information.

To add a formula that calculates the average test grades for the three students shown in the spreadsheet example, the user would have to make the following changes. First, add a column heading called "Average." The user could add this title to column E. After creating the "Average" column in column E, the user would click in cell E3, for example, and type the following:  $=\text{(B3+C3+D3)}/3$ , and then press Enter/Return. The user should see the numerical average of the data in cells B3 through D3 appear in cell E3. The user would then highlight from cell E3 to cell E7 and select Edit . . . Fill . . . Down. The user would then see the averages for all of the students appear in the "Average" column (column E). Once the user has completed these modifications, he or she will be able to see at a glance how the students in this class are performing on the tests.

**Question #17 (Score Point 3 Response)**

When searching for information on the Internet, it is important to understand how certain search terms work in a search engine. For example, if I want to search for sources of information on instructional software, I might enter the search string instructional AND software. The AND lets the search engine know that I want both words represented in the returned links. However, if I were to type in instructional OR software, I would be searching for sites with either word represented, not only sites with both words represented. I would probably find many more hits with this search than with the previous one. These sites would show up in the second search and not the first because the second search string is asking for any sites with the word software on them, while the first search is asking only for sites with both words (instructional and software) present.

## Scoring Information for CSET: Preliminary Educational Technology Subtest I

Responses to the multiple-choice questions are scored electronically. Scores are based on the number of questions answered correctly. There is no penalty for guessing.

There are two constructed-response questions in Subtest I of CSET: Preliminary Educational Technology. Each of these constructed-response questions is designed so that a response can be completed within a short amount of time—approximately 10–15 minutes. Responses to the constructed-response questions are scored by qualified California educators using focused holistic scoring. Scorers will judge the overall effectiveness of your responses while focusing on the performance characteristics that have been identified as important for this subtest (see below). Each response will be assigned a score based on an approved scoring scale (see page 14).

Your performance on the subtest will be evaluated against a standard determined by the Commission on Teacher Credentialing based on professional judgments and recommendations of California educators.

### Performance Characteristics for CSET: Preliminary Educational Technology Subtest I

The following performance characteristics will guide the scoring of responses to the constructed-response questions on CSET: Preliminary Educational Technology Subtest I.

<b>PURPOSE</b>	The extent to which the response addresses the constructed-response assignment's charge in relation to relevant CSET subject matter requirements.
<b>SUBJECT MATTER KNOWLEDGE</b>	The application of accurate subject matter knowledge as described in the relevant CSET subject matter requirements.
<b>SUPPORT</b>	The appropriateness and quality of the supporting evidence in relation to relevant CSET subject matter requirements.

## Scoring Scale for CSET: Preliminary Educational Technology Subtest I

Scores will be assigned to each response to the constructed-response questions on CSET: Preliminary Educational Technology Subtest I according to the following scoring scale.

SCORE POINT	SCORE POINT DESCRIPTION
<b>3</b>	<p><b>The "3" response reflects a command of the relevant knowledge and skills as defined in the subject matter requirements for CSET: Preliminary Educational Technology.</b></p> <ul style="list-style-type: none"> <li>• The purpose of the assignment is fully achieved.</li> <li>• There is an accurate application of relevant subject matter knowledge.</li> <li>• There is appropriate and specific relevant supporting evidence.</li> </ul>
<b>2</b>	<p><b>The "2" response reflects a general command of the relevant knowledge and skills as defined in the subject matter requirements for CSET: Preliminary Educational Technology.</b></p> <ul style="list-style-type: none"> <li>• The purpose of the assignment is largely achieved.</li> <li>• There is a largely accurate application of relevant subject matter knowledge.</li> <li>• There is acceptable relevant supporting evidence.</li> </ul>
<b>1</b>	<p><b>The "1" response reflects a limited or no command of the relevant knowledge and skills as defined in the subject matter requirements for CSET: Preliminary Educational Technology.</b></p> <ul style="list-style-type: none"> <li>• The purpose of the assignment is only partially or not achieved.</li> <li>• There is limited or no application of relevant subject matter knowledge.</li> <li>• There is little or no relevant supporting evidence.</li> </ul>
<b>U</b>	<p><b>The "U" (Unscorable) is assigned to a response that is unrelated to the assignment, illegible, primarily in a language other than English, or does not contain a sufficient amount of original work to score.</b></p>
<b>B</b>	<p><b>The "B" (Blank) is assigned to a response that is blank.</b></p>