



TEXAS TECH UNIVERSITY

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SCI 7A
Science 7, First Semester
(v.2.0)

To the Student:

After your registration is complete and your proctor has been approved, you may take the Credit by Examination for Science 7A.

ABOUT THE EXAM

The exam will consist of approximately 40 questions. You must make a score of 70 to pass the CBE. You should check with your school district to find out the district requirements for your particular needs. You will have three hours to complete the exam.

The examination will cover the science concepts and processes required of seventh-grade students and is based on the National Science Standards and Texas Essential Knowledge and Skills for this subject. Since questions are not taken from any one source, you can prepare by reviewing any of the state-adopted textbooks that are used at your school. If you do not have a textbook or any other study material available locally, you may contact the Outreach & Distance Education Bookstore. The bookstore carries the textbook used with our Science 7A Distance Education course. The textbook is *Texas Science, Grade 7*, by Glencoe/McGraw-Hill. (2002).

There is also a sample examination included with this letter. The sample exam will give you a model of the types of questions that will be asked on your examination. It is not a duplicate of the actual examination. It is provided to illustrate the format of the exam, not to serve as a review sheet.

For more information about CBE policies, visit <http://www.ode.ttu.edu/takeacbe/> or see your course Policies & Forms Guide.

Good luck on your examination!

Sample Exam Questions

The following questions, although they are not the exact questions on the CBE, will give you an idea of what the questions on the exam will look like. Answer the questions on your own paper, then check your answers with the answer key provided.

True/False. Indicate whether each statement is *true* or *false*.

1. Scientific discoveries have been made by people of different races, sexes, cultures, and time periods.

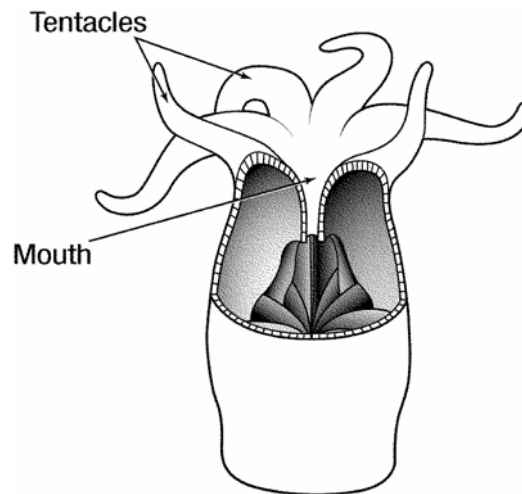


Figure 8.1

2. The organism shown in Figure 8.1 is an example of a medusa body form.
3. Reptile skin is thin and moist to allow gas exchange.

Multiple Choice. Circle the letter of the choice that best completes the statement or answers the question.

4. The ability of a pond to freeze over in winter is a
 - A. physical property.
 - B. chemical property.
 - C. physical change.
 - D. chemical change.

continued →

5. Cnidarians and sponges have _____ layers of tissue; flatworms have _____ layers of tissue.
- A. two; three
 - B. three; two
 - C. two; two
 - D. three; three
6. A Punnett square shows all the ways in which _____ can combine.
- A. alleles
 - B. eggs
 - C. sperm
 - D. colors

Matching. Match each symbol with the correct element or compound.

- | | |
|--------------------|--------------------|
| 7. carbon | A. O ₂ |
| 8. carbon monoxide | B. CO ₂ |
| 9. carbon dioxide | C. CO |
| | D. C |

Short Answer

10. What are two ways that scientists communicate their results to other people?
11. Except during World War II when steel pennies were made, pennies minted before 1984 were made entirely of copper. Pennies made later have a core of zinc covered by a thin layer of copper. Nickels contain about 25% copper and 75% nickel. Classify each type of coin in terms of elements, compounds, homogeneous mixtures, and heterogeneous mixtures.
12. Which of the following groups of organisms are more closely related? Why?
- Group 1: earthworms, spiders, jellyfish
 - Group 2: frogs, trout, centipedes

continued →

Modified True/False. Indicate whether each statement is *true* or *false*. If false, change the underlined word to make the statement true.

13. The closer an electron is to the nucleus, the lower its energy.
14. The state of matter is an example of a physical property.
15. The odor of a substance is an example of a physical property.

Yes/No. Indicate which of the following are characteristics of seed plants by writing *Y* for yes or *N* for no in the blank.

- _____ 16. stems of various sizes
- _____ 17. produce seeds
- _____ 18. produce rhizoids

Completion. Write the word that best completes each statement.

19. For material to be classified as a pure _____, every bit of it must have the same properties.
20. The color of a material is an example of a _____ property.

Seedless Vascular Plants		Nonvascular plants	
Types	Characteristics	Types	Characteristics
<i>A</i>	<i>C</i>	mosses	<i>H</i>
club mosses	roots	<i>F</i>	stalks that look like stems
<i>B</i>	<i>D</i>	<i>G</i>	leaflike green growths
	<i>E</i>		<i>I</i>

Table 10-1

21. In Table 10-1, _____ and _____ are the missing data represented by *H* and *I*.

Problems

22. Copper has two isotopes that are fairly common in nature: copper-63 and copper-65. The average atomic mass for copper is 63.546 u. Which isotope of copper is more common? Explain.
23. The metal aluminum (Al) forms the following compounds with nonmetals: aluminum fluoride (AlF_3), aluminum nitride (AlN_3), aluminum carbide (Al_4C_3), and aluminum oxide (Al_2O_3). What is the ratio of nonmetal atoms to metal atoms in each compound?
24. Suppose you crossed a heterozygous yellow pea plant (Yy) with a homozygous green pea plant (yy). What are the possible genotypes and phenotypes of the offspring? Use the Punnet square in Figure 13-1 to compute your answers.

	Y	y
Y	Yy	yy
y	Yy	yy

Figure 13-1

Answers to Sample Exam Questions

1. True
2. True
3. False
4. A
5. A
6. A
7. D
8. C
9. B
10. written reports and verbal presentations
11. All-copper pennies are examples of an element. Nickels are a homogeneous mixture of copper and nickel. Pennies in which zinc and copper are layered are a heterogeneous mixture.
12. Group 1, because all are invertebrates.
13. True
14. True
15. True
16. Yes
17. Yes
18. No
19. substance
20. physical
21. rootlike fibers (H); reproduce from spores (I)
22. The average atomic mass is much closer to 63 than to 65, so copper-63 is the more common isotope.
23. In AlF_3 , 3 to 1; in AlN_4 , 4 to 1; in Al_4C_3 , 3 to 4; in Al_2O_3 , 3 to 2.
24. possible genotypes: Yy, yy
possible phenotypes: yellow, green