

## CHAPTER REVIEW

# Chapter 16

## Structures and Materials

### I. Vocabulary Review

*Unscramble the words in the following list. Then, use the word or phrase from the list that best matches the descriptions.*

sesmnoicrpe ssstr \_\_\_\_\_

lxmey \_\_\_\_\_

fecrnireod cceetonr \_\_\_\_\_

hraes rtsse \_\_\_\_\_

aiermcc \_\_\_\_\_

ntlseie ssert \_\_\_\_\_

tioausnr \_\_\_\_\_

1. cells in a plant that transport water throughout the plant \_\_\_\_\_
2. a material that heat and electricity do not pass through easily \_\_\_\_\_
3. occurs when an object is lengthened or pulled apart \_\_\_\_\_
4. dry, clay-like material \_\_\_\_\_

*Match each item in Column I with the most appropriate item in Column II. Write the letter for that item in the blank at the left.*

- | Column I                                                                                                          | Column II              |
|-------------------------------------------------------------------------------------------------------------------|------------------------|
| _____ 5. occurs when two forces push toward each other                                                            | a. plastic             |
| _____ 6. orderly arrangement of positively charged ions surrounded by uniformly distributed outer-level electrons | b. reinforced concrete |
| _____ 7. organic material that can be formed into different shapes                                                | c. compression stress  |
| _____ 8. strengthened by long metal rods                                                                          | d. thin film           |
| _____ 9. opposite and equal forces that change the shape of an object                                             | e. electron-sea model  |
| _____ 10. thin layer of one substance applied and bonded to an underlying material                                | f. shear stress        |

## Chapter Review 16 (continued)

### II. Concept Review

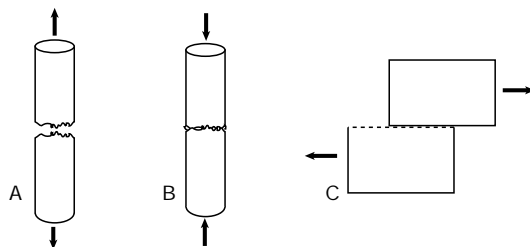
*In the blank at the left, write the letter of the choice that best completes the statement or answers the question.*

- \_\_\_\_\_ 11. Which one of the following is NOT an advantage of using wood as a building material?  
 a. It is a renewable resource.  
 b. It can be carved into many shapes.  
 c. It is naturally resistant to fungi and termites.  
 d. It can easily be nailed together.
- \_\_\_\_\_ 12. Which one of the following were the Egyptians able to use to construct the stone pyramids?  
 a. levers                      b. steam engines              c. cranes                      d. concrete
- \_\_\_\_\_ 13. Which one of the following is NOT used to make concrete?  
 a. cement                      b. sand                          c. small stones              d. xylem
- \_\_\_\_\_ 14. Prestressed concrete is made by \_\_\_\_\_.  
 a. using more water in the concrete mix  
 b. using more stone in the concrete mix  
 c. stretching steel cables before concrete mix is poured, then releasing tension on cables after the concrete is dry  
 d. adding bigger diameter steel cables
- \_\_\_\_\_ 15. Which one of the following is NOT an example of an alloy?  
 a. concrete                      b. brass                          c. bronze                      d. steel
- \_\_\_\_\_ 16. Which one of the following is NOT an example of the advantages of ceramics?  
 a. They are always free of structural defects.  
 b. They are hard.  
 c. They resist corrosion.  
 d. They can withstand high temperatures without cracking.

### III. Skills/Process Review

*In the drawing, the objects have been fractured by stress. Identify the stress responsible for fracturing each of the objects.*

17. Object A \_\_\_\_\_
18. Object B \_\_\_\_\_
19. Object C \_\_\_\_\_



### IV. Feature Review

20. **In-Depth Look: The Frame Game** Why are metals, plastics, and foams being used in place of wood in the construction of buildings? \_\_\_\_\_