

BCT 540 – Design of Wood Structures

Chapters 4 and 5

Topic: Wood Properties and Products

True/False

Indicate whether the sentence or statement is true or false.

- _____ 1. Grade stamps on lumber always specify material strength.
See discussion on typical grade stamps, Chapter 4.3 to help answer this question.
- _____ 2. Springwood (or earlywood) is denser than summerwood (latewood).
Read Chapter 4.6 for the answer.
- _____ 3. A 2 x 4 will typically be stronger (in terms of *ultimate stress*) than a 6 x 8.
See class notes on size effect and Chapter 4.17 for the answer.
- _____ 4. Wood which contains knots and other defects is not used in structural applications.
See chapter 4.10.
- _____ 5. See discussion on page 4.32 to help answer this question.
Timber *columns* are graded differently than timber *beams*.

Multiple Choice

Identify the letter of the choice that best completes the statement or answers the question.

- _____ 6. Dimensional lumber with a moisture content of over 19 percent is defined as:
(Read chapter 4.7)
 - a. saturated lumber
 - b. unseasoned lumber
 - c. kiln dried lumber
 - d. all of the above
- _____ 7. The load duration factor for wood members
(See chapter 4.15)
 - a. always reduces the allowable stress
 - b. always increases the allowable stress
 - c. can either increase or decrease the allowable stress
 - d. none of the above
- _____ 8. Which of the following statements is NOT true?
(See discussion on wood failure modes in class notes)
 - a. When loaded in tension, wood typically fails in a brittle manner.
 - b. When testing for strength of a wood beam, tensile failure often occurs before compressive failure.
 - c. Shear failure parallel to the grain is generally brittle in nature.
 - d. When loaded in compression in the radial direction, wood usually shows ductile behavior.

Name: _____

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- _____ 9. See class notes to answer this question. Which of the following wood properties is most affected by a fluctuation in moisture content?
- a. Bending strength
 - b. Fiber saturation point
 - c. Modulus of Elasticity
 - d. Crushing strength
- _____ 10. Which of the following statements holds the most truth in reference to the *time dependent* behavior of wood?
- a. Wood columns never creep.
 - b. A wood beam will become stronger under sustained load.
 - c. The longer it takes to grow a tree, the stronger the tree will be.
 - d. Wood is usually its strongest when subjected to impact loads.