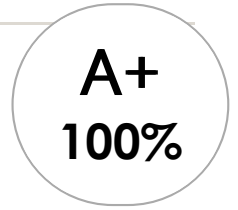


## 17 Multiple choice questions



1. the ability of a material to withstand permanent deformation without failure
  - a. timber
  - b. tension
  - c. **CORRECT:** plasticity
  - d. strain
  
2. a naturally occurring composite material made up of cellulose and lignin
  - a. **CORRECT:** timber
  - b. tension
  - c. truss
  - d. shear
  
3. the first point (load) at which a specimen yields and where an increase in strain occurs without an increase in strength
  - a. vitreous
  - b. yield stress
  - c. **CORRECT:** yield point
  - d. tension
  
4. a calculation based on cross-sectional areas used to predict the resistance of a beam to bending and deflection
  - a. superstructure
  - b. yield point
  - c. **CORRECT:** second moment of area
  - d. tension
  
5. the amount of deformation an object experiences compared to its original length
  - a. stress
  - b. **CORRECT:** strain
  - c. shear
  - d. truss

6. a value calculated to substitute for yield strength when no obvious yield point exists for a material
  - a. **CORRECT: proof stress**
  - b. stress
  - c. yield stress
  - d. truss
  
7. items related to bridges including the roadway, footpaths, railings and supporting structural members
  - a. **CORRECT: superstructure**
  - b. plasticity
  - c. shear
  - d. proof stress
  
8. a measure of rigidity; may also refer to a resistance to flexing
  - a. stress
  - b. timber
  - c. truss
  - d. **CORRECT: stiffness**
  
9. a supportive structure consisting of beams or girders with members arranged in a triangulated configuration
  - a. **CORRECT: truss**
  - b. timber
  - c. strain
  - d. stress
  
10. a term which describes a material that is glass-like in structure
  - a. truss
  - b. timber
  - c. stress
  - d. **CORRECT: vitreous**
  
11. the ratio of stress to strain within the elastic region of the stress-strain curve (prior to the yield point)
  - a. truss
  - b. vitreous
  - c. **CORRECT: Young's modulus**
  - d. yield point

12. a material consisting of a soft, ductile matrix of iron with large inclusions of slag, elongated by the forming process
- CORRECT: wrought iron**
  - truss
  - proof stress
  - tension
13. the relationship between force and the cross-sectional area of a material
- shear
  - CORRECT: stress**
  - truss
  - strain
14. the maximum stress a material can withstand before failing
- yield point
  - tension
  - yield stress
  - CORRECT: ultimate tensile strength**
15. forces applied to a body that attempt to stretch or make the body longer
- strain
  - stress
  - CORRECT: tension**
  - truss
16. movement of a material in which parallel internal surfaces slide past one another
- strain
  - truss
  - CORRECT: shear**
  - stress
17. the maximum engineering stress, in Mpa, at which permanent, non-elastic deformation begins
- stress
  - CORRECT: yield stress**
  - proof stress
  - yield point

