Quizlet NAME _____

17 Multiple choice questions

A+
100%

1. the ability of a material to withstand permanent deformation without failure
   a. weldability
   b. matrix
   c. pearlite
   d. **CORRECT:** plasticity

2. a phase of carbon steel and cast iron consisting of ferrite and cementite formed into distict alternating layers (or lamellae) on slow cooling from austenite; pearlite is a tough phase responsible for the mechanical properties of unhardened steel
   a. tension
   b. matrix
   c. plasticity
   d. **CORRECT:** pearlite

3. a surrounding substance within which something else originates, develops or is contained
   a. shear
   b. strain
   c. **CORRECT:** matrix
   d. steel

4. when one section of a body tends to slide over a neighbouring section
   a. power
   b. steel
   c. **CORRECT:** shear
   d. strain

5. the ratio of stress to strain within the elastic region of the stress-strain curve (prior to the yield point)
   a. toughness
   b. normal
   c. tension
   d. **CORRECT:** Young's modulus

6. the result of twisting forces produced in engine crankshafts while the engine is running; forces causing torsion produce torque or turning moments
    a. strain
    b. tension
    c. **CORRECT:** torsion
    d. normal

7. the ease with which a materal is able to be welded
    a. plasticity
    b. pearlite
    c. **CORRECT:** weldability
    d. tension

8. most often associated with powder metallurgy, sintering involves heating compressed parts in a controlled-atmosphere furnace; the pressed powder particles fuse together (at temperatures below their melting point), forming metallurgic bonds
    a. matrix
    b. strain
    c. **CORRECT:** sintering
    d. steel

9. a metallic product whose principal element is iron and where the carbon content is not more than 2%
    a. power
    b. **CORRECT:** steel
    c. shear
    d. strain

10. the ratio of the applied load (L) to the instantaneous cross-sectional area (A)
    a. strain
    b. toughness
    c. steel
    d. **CORRECT:** true stress

11. the amount of deformation an object experiences compared to its original size
    a. steel
    b. shear
    c. **CORRECT:** strain
    d. torsion

12. the extent to which a material absorbs energy without fracture; the area under a stress-strain diagram is a measure of toughness
    a. power
    b. torsion
    c. true stress
    d. **CORRECT:** toughness

13. a measure of work done over a period of time; power is measured in watts, where one watt is the power used to perform one joule of work in one second
    a. shear
    b. steel
    c. normal
    d. **CORRECT:** power

14. a force applied at 90 degrees to a surface
    a. torsion
    b. strain
    c. **CORRECT:** normal
    d. shear

15. the maximum stress a material can withstand before failing
    a. sintering
    b. **CORRECT:** ultimate tensile strength (UTS)
    c. kinetic energy
    d. true stress

16. the capacity to do work due to a particle's motion
    a. toughness
    b. sintering
    c. plasticity
    d. **CORRECT:** kinetic energy

17. a force tending to stretch or elongate something, a pulling force
    a. strain
    b. torsion
    c. **CORRECT:** tension
    d. steel