



Materials Science Handbook: Volume1
Final Exam

1. Solid matter is held together by forces originating between neighboring _____ or molecules.
 - a. electrons
 - b. atoms
 - c. protons
 - d. neutrinos

2. A *bond* formed by shared electrons:
 - a. covalent
 - b. ionic
 - c. metallic
 - d. molecular

3. A _____ consists of atoms arranged in a pattern that repeats periodically in a three-dimensional geometric lattice.
 - a. cubic structure
 - b. a close-packed structure
 - c. a spiral structure
 - d. crystal structure

4. A very important feature of a metal is the _____ of the *grain*.
 - a. direction
 - b. average size
 - c. strength
 - d. structure

5. With regards to *polymorphism*, metal can exist in _____ phases or crystalline structures.
 - a. two
 - b. four
 - c. three
 - d. seven

6. The _____ phase prevents pure uranium from being used as fuel because of expansion properties.
- Beta
 - Delta
 - Alpha
 - Gamma
7. There are many types of *stresses*, but they can all be generally classified in one of _____ categories.
- four
 - ten
 - eight
 - six
8. When _____ is present *strain* will be involved also.
- stress
 - heat
 - energy
 - force
9. In _____ an English scientist named *Robert Hooke* ran experiments that provided data that showed that in the elastic range of a material, strain is proportional to stress.
- 1776
 - 1514
 - 1889
 - 1678
10. The quality known as *toughness* describes the way a material reacts under:
- increasing heat
 - sudden impacts
 - tension
 - bending