Quizlet NAME _____

15 Multiple choice questions

1. the minimum energy required to remove an electron from a surface by photoemission
    a. x-ray diffraction
    b. striations
    c. work function
    d. q/m ratio

2. semiconductor material has holes as the majority carriers and electrons as the minority carriers; the semiconductor is doped with group III atoms
    a. striations
    b. p-type
    c. quantum
    d. silicon

3. electronic devices that use semiconductors rather than valves in their operation; solid-state devices have all but replace thermionic devices
    a. solid-state devices
    b. striations
    c. thermionic devices
    d. quantum physics

4. use thermionic emission in their operation e.g. the filament of a cathode ray tube
    a. solid-state devices
    b. semiconductors
    c. thermionic devices
    d. Thomson, J.J

5. along with relativity, is the foundation of modern physics; in 1900 Max Planck proposed that light came in bundles or quanta of energy
    a. superconductors
    b. q/m ratio
    c. quantum
    d. quantum physics

6. the patterns formed in a gas at low pressure as an electrical discharge is passed through it
    a. q/m ratio
    b. striations
    c. work function
    d. silicon

7. a British mathematician and physicist who was the first to identify the electron in 1897; he measured the charge to mass ratio (q/m) of cathode rays and showed that all cathode rays had the same value
    a. Thomson, J.J
    b. striations
    c. silicon
    d. quantum

8. a group IV element used extensively in semiconductor devices
    a. silicon
    b. quantum
    c. p-type
    d. striations

9. materials that have zero resistance when their temperatures are low enough; superconductors allow electrons to flow unimpeded
    a. silicon
    b. striations
    c. superconductors
    d. semiconductors

10. an elemental unit of energy; a photon of energy; Planck proposed that emission and absorption of radiation for a black body is quantised
    a. q/m ratio
    b. p-type
    c. quantum
    d. silicon

11. the minimum frequency below which light will not cause the emission of electrons from a material
    a. threshold frequency
    b. silicon
    c. Thomson, J.J
    d. thermionic devices

12. materials with electrical conductivity between that of a conductor and an insulator; common conductors are silicon and germanium; doping a semiconductor alters its electrical properties
    a. superconductors
    b. semiconductors
    c. striations
    d. silicon

13. the charge to mass ratio for charged particles; Thompson measured this ratio for cathode rays and in doing so discovered the electron
    a. striations
    b. quantum
    c. work function
    d. q/m ratio

14. a constant that relates energy and frequency for a photon
    a. Planck's constant
    b. work function
    c. semiconductors
    d. quantum physics

15. the use of x-rays to determine the internal structure of crystals; x-rays are scattered by the crystal and the pattern of reflections is determined by the position of the atoms of the crystal
    a. striations
    b. x-ray diffraction
    c. q/m ratio
    d. work function