Quizlet NAME _____

20 Multiple choice questions

1. an electronic device used to view electrical signals, e.g. waveforms
    a. cathode ray oscilloscope (CRO)
    b. cathode rays
    c. cathode ray tubes
    d. cooper pair

2. the diffraction of x-rays from crystals; British physicist Sir William Henry Bragg (1862-1942) and his son William Lawrence Bragg (1890-1971) applied X-ray diffraction to the study of crystals; called X-ray crystallography
    a. diffraction
    b. conduction
    c. black body radiation
    d. bragg diffraction

3. the area of influence surrounding a charge
    a. electric field
    b. electric current
    c. black body
    d. electrons

4. an idealised body which absorbs all radiation that falls on it according to Planck's law; it is also a perfect radiator of energy
    a. cathode
    b. electrons
    c. cooper pair
    d. black body

5. the structure of crystals e.g. metals
    a. cathode
    b. drift velocity
    c. cooper pair
    d. crystal lattice

6. where two electrons pair up and travel unimpeded through the crystal lattice of a superconductor
    a. cooper pair
    b. cathode rays
    c. conduction
    d. doping

7. the spreading of a wave into the geometrical shadow of an object
    a. conduction
    b. bragg diffraction
    c. electrons
    d. diffraction

8. waves produced by charges oscillating in conductors e.g. radio antennae
    a. electric current
    b. electromagnetic waves
    c. electrons
    d. electric field

9. the French physicist who proposed that matter has wave characteristics
    a. drift velocity
    b. discharge tube
    c. electrons
    d. de Broglie, Louis

10. the manipulation of charged particles by electric and magnetic fields; a cathode ray tube (CRT) has an electron gun, a deflecting system and a florescent screen, which are used in oscilloscopes and TVs
    a. cathode
    b. cathode rays
    c. cathode ray tubes
    d. discharge tube

11. negatively charged subatomic particle found in all neutral atoms
    a. black body
    b. electrons
    c. cathode
    d. conduction

12. the process of adding atoms of group V or group III elements to semiconductor material such as silicon or germanium, which results in a change in the conductivity
    a. doping
    b. cathode
    c. conduction
    d. electrons

13. emitted by a black body that obeys Planck's law
    a. conduction
    b. bragg diffraction
    c. black body radiation
    d. black body

14. an evacuated glass tube containing electrodes and used to investigate the effect of passing electricity through gases at low pressures
    a. cathode rays
    b. discharge tube
    c. diffraction
    d. cathode ray tubes

15. the flow of charge, which is carried by electrons in metal conductors and both holes and electrons in semi-conductors
    a. electric field
    b. discharge tube
    c. electrons
    d. electric current

16. particles that travel from the negative electrode (cathode) of an electric discharge tube; experiments show that cathode rays are electrons; the nature of cathode rays - wave or particle - was long debated
    a. cooper pair
    b. cathode rays
    c. cathode
    d. cathode ray tubes

17. the electron-emitting electrode in an electron tube
    a. black body
    b. cathode
    c. cathode rays
    d. electrons

18. the process of charge moving through a medium; conduction in metals results from the drift of a large number of electrons through the lattice
    a. electrons
    b. conduction
    c. diffraction
    d. cathode

19. the speed of electrons moving through a conductor; depends on the density of electrons, the cross-sectional area and the charge
    a. black body
    b. crystal lattice
    c. diffraction
    d. drift velocity

20. quantum-mechanical effect where two electrons pair up and pass unimpeded by the lattice
    a. BCS model of superconductivity
    b. black body radiation
    c. drift velocity
    d. conduction