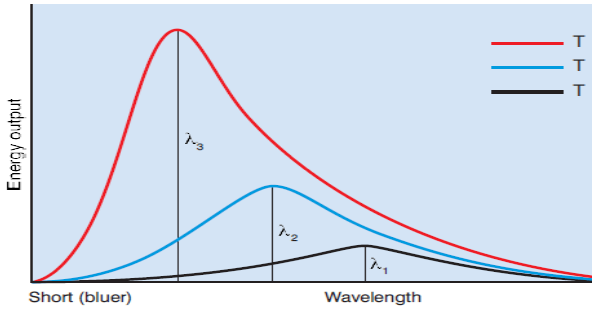
1. When the intensity of light shining on a metal increases,(UEE:2003)
   A. The energy of photoelectrons, emitted, will increase.
   B. The number of photoelectrons, emitted, will increase.
   C. The threshold frequency for photoelectrons emission will increase.
   D. The photoelectrons emitted will be deflected.
2. A key phenomenon that demonstrates the particle nature of light is:(UEE:2003)
   A. Photoelectric effect. C. Dispersion of light.
   B. Doppler Effect. D. Interference.
3. Which of the following is correct about the meaning of Photon?(UEE:2005)
   A. Quantum of matter. C. Negatively charged particle.
   B. Positively charged particle. D. Quantum of light.
4. The energy spectrum emitted by a black body at different temperature is as shown in the figure below. Which of the following statement is **NOT** correct about the black body energy spectrum?(UEE:2005)



   A. $T_1 > T_2 > T_3 > T_4$.
   B. $\lambda_1 > \lambda_2 > \lambda_3 > \lambda_4$.
   C. Black body radiates energy over the entire electromagnetic spectrum.
   D. The wavelength corresponding to the maximum intensity increases with temperature.
5. The half-life of radium-224 is 3.5 days. What fraction of the sample remains undecided after fourteen days? (If needed use = ln2 = -ln(1/2) ≈ 0.693)(UEE:2006)
   A. 1/2. B. 1/4. C. 1/8. D. 1/16
6. Which of the following phenomena most clearly demonstrates the wave nature of electrons?(UEE:2007)
   A. The photoelectric effect. C. The Compton Effect.
   B. Black body radiation. D. Diffraction of electrons by crystals.
7. When the radioactive element $^{144}Nd_{60}$ decays to $^{140}Ce_{58}$, which none of the following particles is emitted?(UEE :2007)
   A. A beta particle. C. A proton.
   B. An alpha particle. D. A gamma ray.
8. In photoelectric effect, the energy of photoelectrons is proportional to the:(UEE:2008)
   A. Frequency of light. C. Speed of light.
   B. Intensity of light. D. absorbance of the metal.

9. The activity of a radioactive source falls to one sixteenth of its original value in 32 minutes. What is the half-life, in minutes, of this decay process? (UEE:2008)
   A. 2 min. B. 8 min. C. 4 min. D. 16 min.
10. Which statement is NOT correct about emissions from radioactive isotopes?(UEE: 2008)
    A. Alpha particles are positively charged and less penetrating than beta and gamma.
    B. Beta particles are negatively charged and more penetrating than alpha mparticle.
    C. Alpha emissions are least influenced by magnetic field.
    D. The most penetrating emissions are gamma particles.
11. A common unit of energy in atomic physics is: (UEE:2008)
    A. Plank's constant. C.De Broglie wave length
    B. Electron volt. D. uncertainty principle.
12. Which of the following phenomena clearly demonstrates the particle nature of light? (UEE:2009)
    A. Refraction of light by prism. C. diffraction of light by double slit.
    B. The photoelectric effect. D. Dispersion of white light.
13. The activity of radioactive substance reduces from 2000Bq to 1000Bq in 106 seconds. What is the decay constant? (UEE:2009)
    A. 6.93×10^{5} decay/s. C. 2×10^{6} decay/s.
    B. 6.93×10^{-7} decay/s. D. 5×10^{-7} decay/s.
14. Which of the following has an electron volt unit (UEE:2010).
    A. Charge. C. Energy.
    B. Potential difference D. electromagnetic intensity.
15. In Rutherford experiment,a beam of positively charged alpha particles was projected into a thin piece of gold foil. One of the observations ofthis experiment is that same charged particles deflected through a large angle (10^{0} to 90^{0}) are those concentrated in one place. What conclusion can be drawn from this observation? (UEE:2010)
    A. Most of the atom is empty space.
    B. All the atom is positive charge.
    C. Most of the mass and all positive charge is in tiny central nucleus.
    D. All the atom's negative charge.
16. When ultraviolet light is shone on a clean metal surface the surface will emit electrons. What is the necessary precondition for electrons to be ejected from the metal surface is? (UEE: 2011)
    A. The intensity of light must be high enough.
    B. The minimum energy required to release the electron is the same as the work function of the metal.
    C. The wavelength of the light has to be greater than that of ultraviolet light.
    D. The frequency of the metal has to be less than that of ultraviolet light.
17. Complete the following equation which represents a nuclear fission reaction. What is the particle represented by X? $^{235}U + {}^{1}_{0}n \rightarrow {}^{95}Rb + {}^{139}Cs + 2x$ + energy? (UEE: 2011)
    A. Electron. B. proton. C. neutron. D. alpha particle.

THE END