QUESTION BANK

SUBJECT:APPLIED SCIENCE(PHYSICS)(17210)

Q.1 Questions for 2 Marks.

1. Define stimulated absorption and population inversion.
2. State any two applications of LDR.
3. Define Intrinsic and Extrinsic semiconductors.
4. Define Threshold frequency and photoelectric work function.
5. State any two applications of photoelectric cell.
6. State the formula for Minimum wavelength and maximum frequency for X-ray.
7. An X-ray tube works on 30KV. What will be the wavelength of X-rays emitted by it?
8. State any two properties of photon.
9. State Planck's Quantum theory.
10. State characteristics of LASER.
11. Define Stopping potential and Threshold wavelength.
12. Define metastable excited state and Ordinary excited state
13. Give any two applications of X-rays.
14. Distinguish between Spontaneous emission and Stimulated emission.

Q.2 Questions for 3 or 4 Marks

1. State Characteristics of Photoelectric effect.
2. Explain the Construction and working of photoelectric cell.
3. State properties of X-rays.
4. Describe construction of He-Ne LASER with suitable diagram.
5. State any four applications of Photodiode.
6. Explain production of X-ray using Coolidge X- ray tube.
7. State any four applications of LASER.
8. The threshold frequency of a metal is 2.11 X 10^{15} Hz. If a light of frequency 2.49X10^{15}Hz is made incident on metal plate, calculate the maximum Kinetic energy of ejected photoelectron.
9. Explain working of PN junction diode in Forward bias.
10. Define pumping and explain its types.
11. Derive an equation for Einstein's photoelectric equation.
12. Find maximum K.E of photoelectrons ejected from surface of metal of light of frequency 2 X 10^{15}Hz(given threshold wavelength for metal=5200Au)
13. Explain working of PN junction diode in Reverse bias.
14. Distinguish between Conductors, Semiconductors and insulators on basis of Band Theory.