BBMerlion

Physics A Level

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QUIZ 4

Quantum Physics

Lasers and Semiconductors

Nuclear Physics

Question 1

In photoelectric experiment 2 type of metal, metal A and metal B are exposed to monochromatic light with frequency f. Metal A has greater work function compared to Metal B. Potential difference with magnitude V is used to stop the electrons ejected from these experiment. Sketch **one** graph describing the respond of both metal (metal A is in the same graph with metal B), use Potential difference V as vertical axis and frequency of the light as horizontal axis. State clearly the gradient and the threshold frequency of both metal

Question 2

Sketch and **explain** the IV (Current and Voltage) characteristic of a diode p-n junction using graph. Use Current *I* as vertical axis and *V* as horizontal axis. (Hint: consider the forward bias, reverse bias and breakdown region)

Question 3

An age of wooden archeological specimen is determined by recording the activity of C_{14} (carbon isotope). The result of the measurement is recorded below:

- ✓ 1 g sample of living wood has a count rate of 80 counts/min
- ✓ 1 g sample of archeological specimen has a count rate of 35 counts/min
- ✓ no sample has a count rate of 20 counts/min

The half life of C_{14} is 5700 years, determine the age of the archeological specimen

References

A level complete guide, Themis Publisher,

www.xtremepapers.com,

Physics MCQ with helps (topical).