

Worksheet: Dual Nature of Radiation and Matter

West Bengal State Board · Class 12 · Physics · 5 questions · 12 marks

Name: _____

Date: _____

Score: _____ / 12

Q1. The threshold frequency of a metal is 5×10^{14} Hz. Find the work function in eV ($h = 4.14 \times 10^{-15}$ eV s). [2 marks]

Q2. Find the de Broglie wavelength of an electron accelerated through 100 V. [2 marks]

Q3. Photoelectrons of max KE 1.5 eV are emitted by 300 nm light. Find the work function ($hc = 1240$ eV nm). [3 marks]

Q4. Find the de Broglie wavelength of a proton ($m = 1.67 \times 10^{-27}$ kg) at 2×10^6 m/s. [3 marks]

Q5. Stopping potential is 1.2 V for 400 nm light. Find the work function. [2 marks]
