

1. (8 pts) When a certain metal surface is bombarded with ultra-violet light of wavelength 2000 \AA , the stopping potential is found to be 3.6 volts. Without any potential difference applied, the longest wavelength which can be used to eject photoelectrons from this surface is therefore

- (A) 4770 \AA (B) 3445 \AA (C) 5220 \AA (D) 1355 \AA (E) 2710 \AA

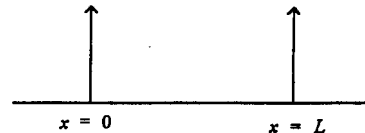
Ans: ()

4. (8 pts) The time-independent wave function describing a beam of particles travelling in the positive x direction is $\psi(x) = 50e^{i(4x)}$ where x is in nm. In units of eV/c , the momentum of these particles must be about

- (A) 790 (B) 13,400 (C) 46.5 (D) 142 (E) 18,500 (F) 5100

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1. (8 pts) A particle is trapped in a one-dimensional infinite square well with walls at $x = 0$ and $x = L$. When it occupies the second ($n = 2$) energy level, the position where it is least likely to be found is at



- (A) $x = L/8$ (B) $x = L/4$ (C) $x = L/3$
 (D) $x = L/2$ (E) $x = 3L/4$

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