























く器Q口①























219 HW#1.



 $\bullet \bullet \bullet$















Phys141 ×































3.
$$B = \frac{hc}{R}$$

$$\frac{6.626 \times 10^{-34} Rs. \times 3 \times 10^{8} m/s}{10600 nm.}$$

$$\lambda = \frac{he}{B}$$

$$\lambda = \frac{6.626 \times 10^{-34} \text{ J.S. x. } 3 \times 10^8 \text{ M/3}}{4.810 \times 1.6 \times 10^{-19} \text{ J/eV}}$$



•••





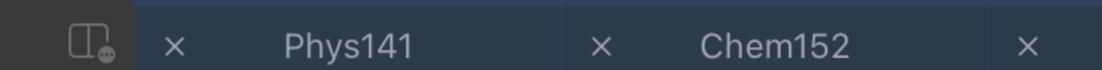






BioStats × MSE110





Math129































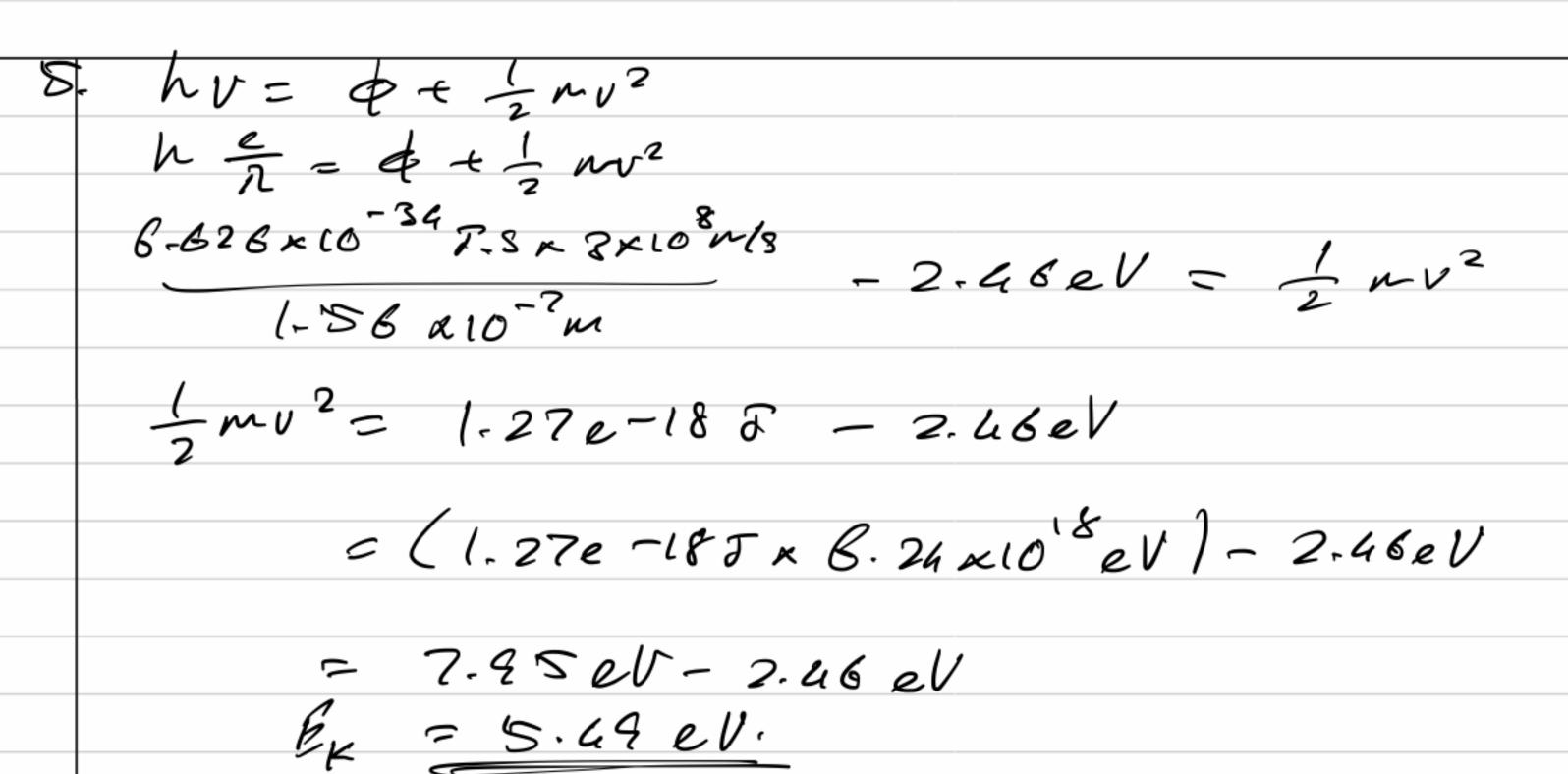












6.
$$\frac{hc}{h} = \phi + B_{K}$$

$$\phi = B_{K} - \frac{hc}{h}$$

$$\phi = 5.84 \times 10^{-19} T - \frac{8.676 \times 10^{-34} T.8 \times 3 \times 10^{8} mls}{1.56 \times 10^{-7} m.}$$

$$\phi = -6.9 \times 10^{-19} T.8 \times 6.24 \times 10^{18} eV$$

$$= -4.31 eV. ?$$



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7.	Ex = edVs.	Ox= 3.36 x10 -19 J.
	3.36×10 197=	1.6 x 10 18.

$$\Delta V_{8} = \frac{3.36 \times 10^{-19}}{1.8 \times 10^{-19}}$$

$$= 2.1. V_{1}$$

$$\frac{hc}{2} = \phi + \beta_{k}$$

$$\beta_{k} = \frac{hc}{2} - \phi.$$

$$\beta_{k} = \frac{6.628 \times 10^{-24}}{4.88 \times 10^{-24}} - 2.14 eV$$

$$= 2.54 eV - 2.14 eV$$



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hv= + Ex = e 1 vs.

 $\frac{hc}{R} = 4.1eV + 1.6\kappa10^{-19} \times 1.7V.$ $R = \frac{6.626\kappa10^{-34} TS \approx 3\kappa10^{8} m/s}{4.1eV \times 1.6\kappa10^{-19}}$

2 = 2-14e-7m. = 214 nm

4 KLO -19 F = P2 KO 27 68. K2 p2= Gx10-19 Tx 6.65x10-27 kg. x2. p= [5-32e-45 $\rho = 7.24 e^{-23} J k g$ $= 7.29 e^{-23} k g^2 n^2$ $= 3.29 e^{-23} k g^2 n^2$

MSE110 ~























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$$P = \frac{E_{K}}{2m}$$

$$P = \frac{E_{K}}{2(6.63 \times 10^{-23} \text{ kg})}$$

$$\lambda = \frac{h}{\rho}$$

$$\lambda = \frac{6.626 \times 10^{-34} T.8}{81.41.}$$

$$= 1.679 e - 35 M.$$

$$E = \frac{hc}{\pi}$$

$$E = \frac{hc}{\pi}$$

$$E = \frac{6.826 \times 10^{-34} \times 3 \times 10^{8}}{2.78 \times 10^{-7}}$$

$$= 8.35 \times 10^{-19} \text{ T. } \times 8.24 \times 10^{18}$$

$$= 8.21$$

$$hc = 4.31 \text{ eV} + 5.21 \text{ eV}.$$

$$\pi = \frac{6.626 \times 10^{-34} \text{ J. } \times 3 \times 10^{8} \text{ m/s}}{4.52 \text{ eV} \times 1.6 \times 10^{-19}.}$$

$$\pi = 1.305 \text{ e} - 7 \text{ m}$$

$$= 130.5 \text{ pm}.$$

























×





 $Q \square \square$

















X





$$\frac{13.6}{NC} \left(\frac{1}{N_{e}^{2}} - \frac{1}{N_{i}^{2}} \right)$$

$$= \frac{13.6}{NC} \left(\frac{1}{2^{2}} - \frac{1}{4^{2}} \right)$$

$$= \frac{13.6}{NC} \left(\frac{1}{4} - \frac{1}{16.} \right)$$

$$= \frac{13.6}{NC} \left(\frac{3}{16} \right)$$

$$= \frac{13.6}{NC} \left(\frac{3}{16} \right)$$

$$= \frac{13.6}{NC} \left(\frac{3}{16.0} \right)$$

$$= \frac{13.$$

$$\frac{10.2eV}{hc} = \frac{1}{N\rho^{2}} - \frac{1}{1}$$

$$\frac{13.6}{hc} + 1 = \frac{1}{N\rho^{2}}$$

$$\frac{13.6}{hc} + 1$$

$$\frac{18.6}{hc} + 1$$

$$h\rho = \begin{bmatrix} \frac{1}{13.6} + 1 \\ \frac{1}{13.6} + 1 \end{bmatrix}$$

$$n_{\beta} = 1$$

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N= 5-241 ×10-4 1= 7-0547 ×10-11 M. 12 0.070547nm.

18. $\Gamma = 20 \frac{N^2}{2}$ = 5.29 laco una $\frac{2^2}{11}$ = 1-924e-11m = 8-01924 nm.

17. A. Be3+ -> 12 5. 291x10 -1 4. = 5.291x10-11 = 0.0579(nm.

B-F8+ - 5-291210"12 - 9 = 7-35e-11 m = 0.0235 nm

@ Mg/14 -> N= 15-29/210" x 4/2 = 0.0176 nm

B7t -> 1= 5-291x10"x 4 r - 7.646e-11 = 0.02846 nm.

Answer:

