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Johnny Student (uteidxx)

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version number

EXAM 1

Instructor Name . Fall 2015

(unique: 49xxx)

REMEMBER: Bubble in ALL Bubblesheet information!

This includes your first and last name, your UTEID, and your version number.

Please refer to the back of the bubble sheet for more info.

$$h = 6.626 \times 10^{-34} \text{ J} \cdot \text{s}$$

$$\mathcal{R} = 2.18 \times 10^{-18} \text{ J}$$

$$c = 3.00 \times 10^8 \text{ m/s}$$

$$N_A = 6.022 \times 10^{23} \text{ mol}^{-1}$$

$$m_e = 9.11 \times 10^{-31} \text{ kg}$$

$$1 \text{ lb} = 453.6 \text{ g}$$

$$1 \text{ in} = 2.54 \text{ cm}$$

$$1 \text{ u} = 1.66 \times 10^{-27} \text{ kg}$$

$$c = \lambda \cdot \nu$$

$$E = h\nu$$

$$E_k = \frac{1}{2}m_e v^2 = h\nu - \Phi$$

$$E_n = -\frac{\mathcal{R}}{n^2}$$

$$\Delta E = \mathcal{R} \left(\frac{1}{n_f^2} - \frac{1}{n_i^2} \right)$$

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

$$\psi_n(x) = \left(\frac{2}{L}\right)^{\frac{1}{2}} \sin\left(\frac{n\pi x}{L}\right) \quad n = 1, 2, \dots$$

$$E_n = \frac{n^2 h^2}{8mL^2} \quad n = 1, 2, 3, \dots$$

$$\Delta x \Delta p \geq \frac{h}{4\pi}$$

$$-\frac{\hbar^2}{2m} \frac{d^2\psi}{dx^2} + V(x)\psi = E\psi$$

NOTE: Please keep your Exam copy intact (all pages still stapled). You must turn in your exam copy, plus your bubble sheet, and any scratch paper.