

HW.8

7.18: $A = (2/L)^{3/2}$

7.20:

(a) (1,1,1): 1.13 eV, (2,1,1): 2.26 eV, (2,2,1): 3.39 eV

(b) 1.13 eV: (1,1,1),

2.26 eV: (2,1,1), (1,2,1), (1,1,2),

3.39 eV: (2,2,1), (2,1,2), (1,2,2)

7.23: (a) 0.609, (b) 0.196, (c) 0.609

7.32:

(a) 486 [nm],

(b) for (4 → 3): 1875 [nm], for (4 → 1): 97.2 [nm]

7.37: 150, 125.3, 106.8, 73.2, 54.7, 30

7.38: 0, (+-)1 hbar, (+-)2 hbar, (+-)3 hbar, (+-)4 hbar, (+-)5 hbar, (+-)6 hbar, (+-)7 hbar, (+-)8 hbar, (+-)9 hbar

7.45:

(a) -0.85 eV,

(b) $L = 0$, $\sqrt{2}\hbar$, $\sqrt{6}\hbar$, $\sqrt{12}\hbar$

$L_z = -3\hbar$, $-2\hbar$, $-\hbar$, 0 , $+\hbar$, $+2\hbar$, $+3\hbar$

7.47:

7.53: 0.212

7.60: (a) -27.2 eV, (b) +13.6 eV