Daily Tutorial Sheet 7	Level – 2

86.(B) According to n + l rule (Aufbau principle)

87.(C) Pauli's principle imply that only two e^-s are possible in an orbital with opposite spin.

88.(D) Pauli's principle

89.(A) $n_2 = 6$ to $n_1 = 2$ belong to Balmer series.

90.(A) The energy of 2^{nd} orbit = $-13.6 \times \frac{1}{2^2} = -3.4$ eV

So energy required to remove it = 3.4 eV.

91.(C) e/m ratio for electron was determined by Thomson.

92.(B) Na^+ and Ne contains 10 e^-s, hence isoelectronic

93.(A) Angular momentum = $\frac{nh}{2\pi}$, or $n\hbar$ where n = 1,2, 3....

94.(C) $r_n \propto \frac{n^2}{Z}$ $\qquad \frac{(r)_H}{(r)_{Li^{2+}}} = \frac{Z_{Li^{2+}}}{Z_H}$ $\qquad r_{Li^{2+}} = \frac{r}{3}$

95.(C) 4341 Å : Visible region in H – atom (Balmer series : $n_1 = 2$)

$\frac{1}{\lambda} = RZ^2\left(\frac{1}{n_1^2} - \frac{1}{n_2^2}\right)$ $\qquad \frac{1}{4341 \times 10^{-8}} = 109677 \times 1^2 \times \left(\frac{1}{2^2} - \frac{1}{n^2}\right)$

$n_2 = 5$