14.21 (a) Following the same calculation as in Prob 14.22 (b), for the n-th quantum state,

the fundamental frequency and the radius of the electron orbit are

$$W_0 = \frac{Z^2 m e^4}{n^3 \hbar^3} \quad , \quad a = \frac{n^2 \hbar^2}{Z m e^2} \quad , \quad \text{respectively}$$

The total power radiated, in the dipole radiation approximation, is

$$P = \frac{2e^2}{3c^3} W_0^4 a^2 , \quad \text{by considering both } W_0 \text{ and } \pm W_0 \text{ component.}$$

Then, the result follow the same calculation as in Prob 14.22 (b).