

Tugas

1. The ground-state electron configurations listed here are incorrect. Explain what mistakes have been made in each and write the correct electron configurations.
Al: $1s^2 2s^2 2p^4 3s^2 3p^3$
B: $1s^2 2s^2 2p^5$
F: $1s^2 2s^2 2p^6$
2. Considering only the ground-state electron configuration, are there more diamagnetic or paramagnetic elements? Explain. Considering only the ground-state electron configuration, are there more diamagnetic or paramagnetic elements? Explain.
3. A laser is used in treating retina detachment. The wavelength of the laser beam is 514 nm and the power is 1.6 W. If the laser is turned on for 0.060 s during surgery, calculate the number of photons emitted by the laser. ($1 \text{ W} = 1 \text{ J/s}$.)
4. A microwave oven operating at $1.22 \times 10^8 \text{ nm}$ is used to heat 150 mL of water (roughly the volume of a tea cup) from 20°C to 100°C . Calculate the number of photons needed if 92.0% of microwave energy is converted to the thermal energy of water.
5. One wavelength in the hydrogen emission spectrum is 1280 nm. What are the initial and final states of the transition responsible for this emission?