

TUGAS KIMIA UMUM C (kelompok jadual kuliah Rabu jam 08.00)

1. The radii of the sodium and potassium ions are 102 pm and 138 pm, respectively. Which compound has stronger ionic attractions, sodium chloride or potassium chloride?
2. Does potassium nitrate (KNO_3) incorporate ionic bonding, covalent bonding, or both? Explain.
3. An X-ray has a wavelength of 1.3 \AA . Calculate the energy (in Joule) of one photon of this radiation.
4. The following quantum number combinations are not allowed. Assuming the n and m_l values are correct, change the l value to create an allowable combination: (a). $n=3, l=0, m_l=-1$; (b). $n=3, l=3, m_l=+1$; (c). $n=7, l=2, m_l=+3$; (d). $n=4, l=1, m_l=-2$.
5. Write a full set of quantum numbers for the following: (a). outermost electron in an Rb atom; (b). The electron gained when an S^- ion becomes an S^{2-} ion; (c). The electron lost when an Ag atom ionizes; (d). the electron gained when an F^- ion forms from an F atom
6. Palladium (Pd, $Z=46$) is diamagnetic. Draw partial orbital diagram to show which of the following electron configurations is consistent with this fact: (a). $[\text{Kr}]5s^2 4d^8$; (b) $[\text{Kr}]4d^{10}$; (c). $[\text{Kr}]5s^1 4d^9$
7. Both nitrogen and bismuth are members of Groups 5A(15). Which is more metallic? Explain your answer in term of atomic properties.
8. When liquid benzene (C_6H_6) boils, does the gas consists of molecules, ions, or separate atoms? Explain scientifically.