- Complete the following table.

3

Species	Full electron configuration
gallium atom	
P^{3-}	
K^+	

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- Gaseous lithium atoms absorb light with a wavelength of 323 nm. The resulting excited lithium atoms lose some energy through collisions with other atoms. One of the emission lines has an energy of 2.44×10^{-19} J.
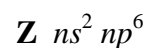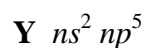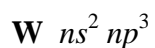
4

Calculate the energy of the light used for the excitation.

Answer:

Calculate the wavelength of the light emitted.

Answer:

- Consider the elements **W**, **X**, **Y** and **Z** from the same period, n, with the following valence electron configurations:

    W $ns^2\,np^3$ **X** ns^2 **Y** $ns^2\,np^5$ **Z** $ns^2\,np^6$

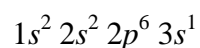   Which element will conduct electricity in the solid state?

    Which element will be the most electronegative?

    Which element will possess the largest atomic radius?

3

- Write the electronic configuration of lowest energy for the following species. Na is given as an example.

Na	$1s^2\,2s^2\,2p^6\,3s^1$
Al^{3+}	
Cl	

2

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- What is the ground state electron configuration for the chlorine atom?

**Marks
2**

- What element has the ground state electronic arrangement of $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^3$?

1