Name _____ Date _____

Worksheet 3.1: Electron configuration

1 Work out the full and condensed electron configurations for the following elements:

	Full electron configuration	Condensed electron configuration
B		
S		
Cr		
Cu		
Ge		

2 Work out the full and condensed electron configurations for the following ions:

	Full electron configuration	Condensed electron configuration
N^{3-}		
S^{2-}		
Ti^{4+}		
Co^{2+}		
Rb^{+}		

3 Given the following ground-state electron configurations, write the chemical symbols for the atoms:

Electron configuration	Symbol
$1s^2 2s^2 2p^5$	
$1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$	
$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^5$	
$[Ne]3s^2 3p^2$	
$[Ar]4s^2 3d^{10} 4p^4$	

4 Identify the regions of the electromagnetic spectrum the following electronic transitions in a hydrogen emission spectrum belong to (*n* is the number of the main energy level):

Transition	Electromagnetic radiation
$n = 3 \rightarrow n = 1$	
$n = 6 \rightarrow n = 2$	
4p → 3s	
5d → 2p	
3d → 1s	