

Solutions

Chapter 1: Solutions

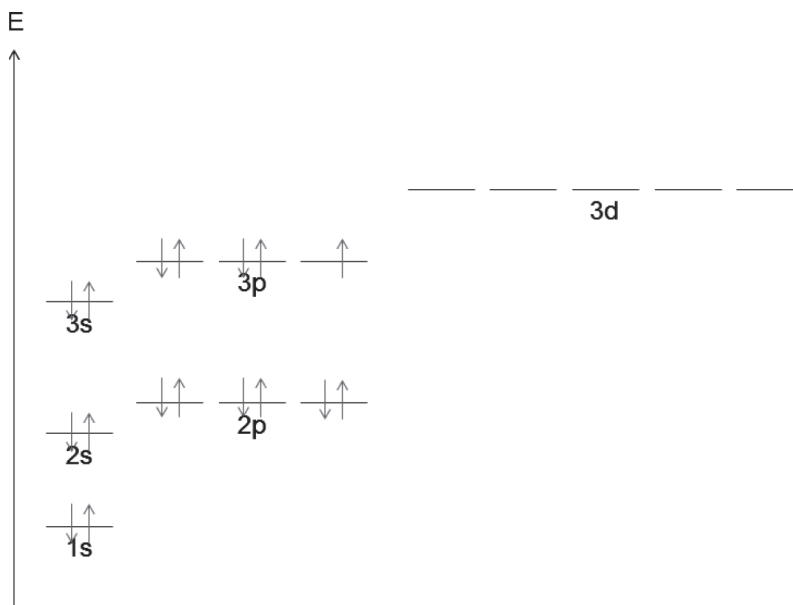
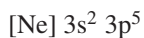
1.1 Exercises

1.1.1 Write the electron configuration for the following elements or ions:

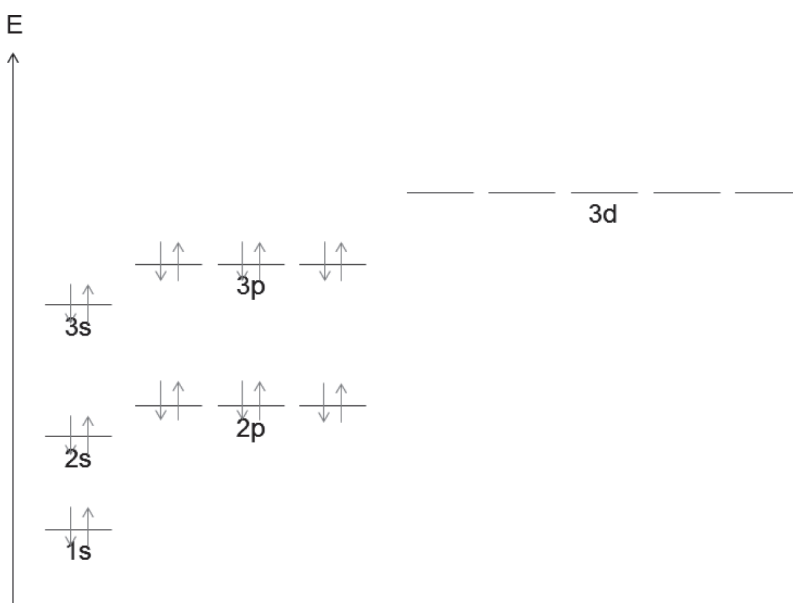
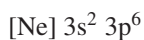
- (a) F
 $[\text{He}] 2s^2 2p^5$
- (b) Cl
 $[\text{Ne}] 3s^2 3p^5$
- (c) Cl^-
 $[\text{Ne}] 3s^2 3p^4$
- (d) Na
 $[\text{Ne}] 3s^1$
- (e) Na^+
 $[\text{Ne}]$
- (f) Si
 $[\text{Ne}] 3s^2 3p^2$

1.1.2 Draw the energy diagram for the following elements or ions:

(a) Cl

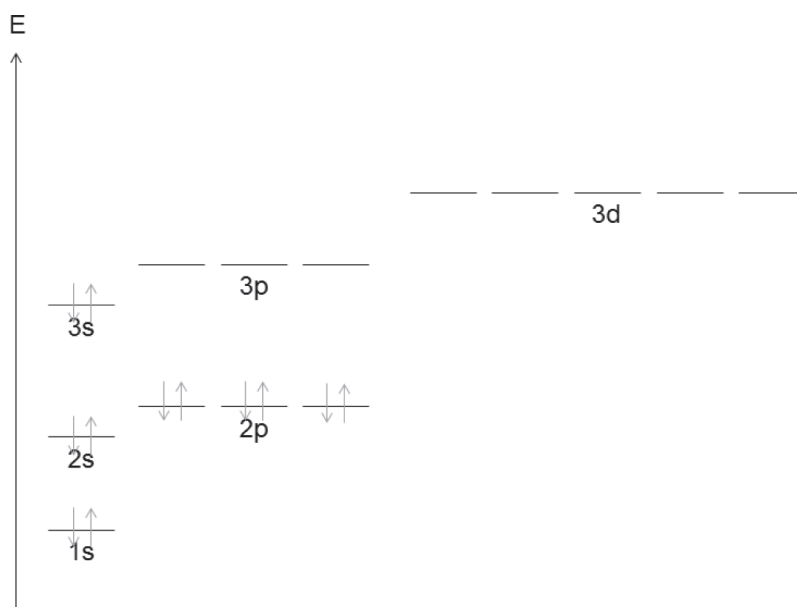


(b) Cl^-



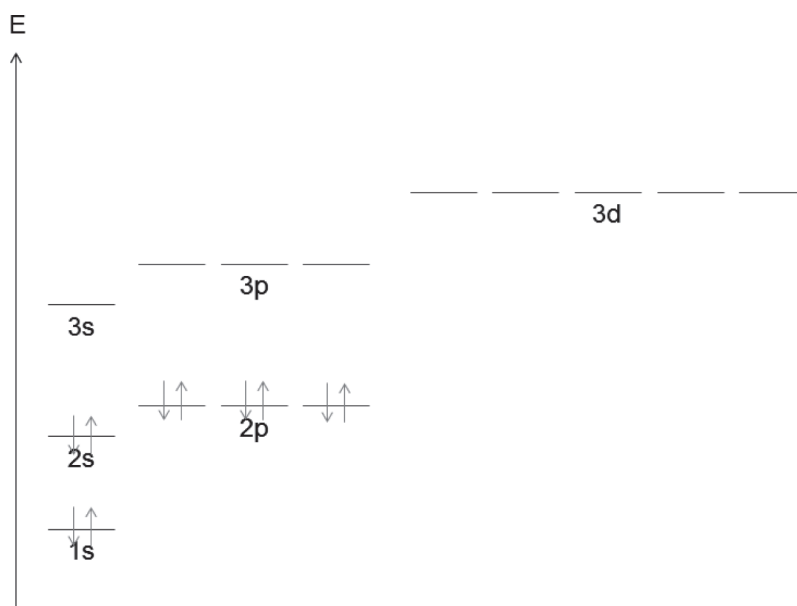
(c) Mg

[Ne] $3s^2$



(d) Mg^{2+}

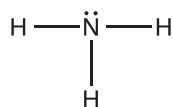
[Ne]



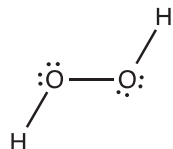
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1.1.3 Draw the Lewis structure for the following molecules:

(a) NH_3



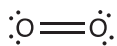
(b) H_2O_2



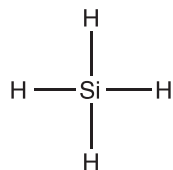
(c) F_2



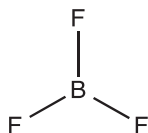
(d) O_2



(e) SiH_4



(f) BF_3



(g) N_2



[illegible]

- | | | |
|-----|------------------|-----|
| (a) | HCl | 0.9 |
| (b) | HBr | 0.7 |
| (c) | NH ₃ | 0.9 |
| (d) | NaCl | 2.1 |
| (e) | SiH ₄ | 0.3 |