

## RISPOSTE AGLI ESERCIZI 2. La struttura dell'atomo

Pagina 19 Esercizi applicativi  
Esercizi da risolvere

ISOTOPO	SIMBOLO DELL'ISOTOPO	NUMERO DI MASSA (A)	NUMERO ATOMICO (Z)	NUMERO DI NEUTRONI (A-Z)
OSSIGENO-17	<sup>17</sup> O	17	8	9
BARIO-138	<sup>138</sup> Ba	138	56	82
AZOTO-15	<sup>15</sup> N	15	7	8
CALCIO-44	<sup>44</sup> Ca	44	20	24
RAME-63	<sup>63</sup> Cu	63	29	34
BROMO-81	<sup>81</sup> Br	81	35	46
ARGENTO-109	<sup>109</sup> Ag	109	47	62
ZINCO-68	<sup>68</sup> Zn	68	30	38
ARSENICO-75	<sup>75</sup> As	75	33	42
FERRO-56	<sup>56</sup> Fe	56	26	30

### II) Configurazione elettronica

Elemento	Simbolo	Numero atomico	CONFIGURAZIONE ELETTRONICA					
			1s	2s	2p	3s	3p	4s
Sodio	Na	11	1s <sup>2</sup>	2s <sup>2</sup>	2p <sup>6</sup>	3s <sup>1</sup>		
Azoto	N	7	1s <sup>2</sup>	2s <sup>2</sup>	2p <sup>3</sup>			
Alluminio	Al	13	1s <sup>2</sup>	2s <sup>2</sup>	2p <sup>6</sup>	3s <sup>2</sup>	3p <sup>1</sup>	
Cloro	Cl	17	1s <sup>2</sup>	2s <sup>2</sup>	2p <sup>6</sup>	3s <sup>2</sup>	3p <sup>5</sup>	
Ossigeno	O	8	1s <sup>2</sup>	2s <sup>2</sup>	2p <sup>4</sup>			
Potassio	K	19	1s <sup>2</sup>	2s <sup>2</sup>	2p <sup>6</sup>	3s <sup>2</sup>	3p <sup>6</sup>	4s <sup>1</sup>
Boro	B	5	1s <sup>2</sup>	2s <sup>2</sup>	2p <sup>1</sup>			
Neon	Ne	10	1s <sup>2</sup>	2s <sup>2</sup>	2p <sup>6</sup>			
Magnesio	Mg	12	1s <sup>2</sup>	2s <sup>2</sup>	2p <sup>6</sup>	3s <sup>2</sup>		
Fosforo	P	15	1s <sup>2</sup>	2s <sup>2</sup>	2p <sup>6</sup>	3s <sup>2</sup>	3p <sup>3</sup>	
Zolfo	S	16	1s <sup>2</sup>	2s <sup>2</sup>	2p <sup>6</sup>	3s <sup>2</sup>	3p <sup>4</sup>	

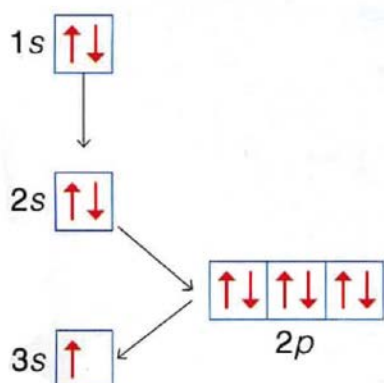
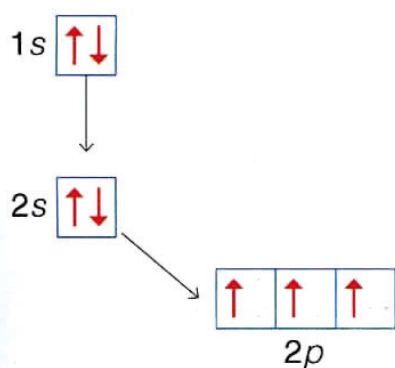
### Pagina 20 (segue)

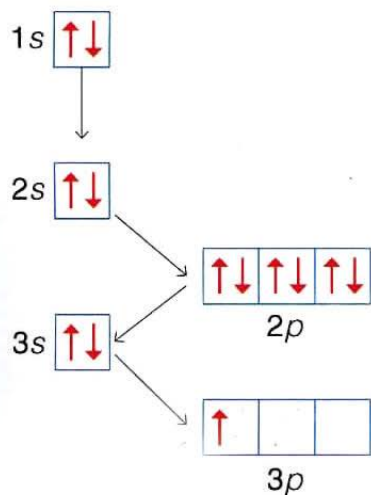
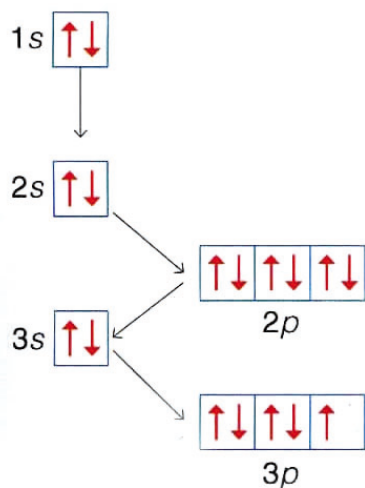
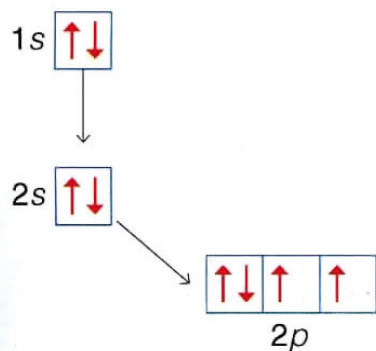
Elemento	Simbolo	Numero atomico	CONFIGURAZIONE ELETTRONICA													
			1s	2s	2p	3s	3p	4s	3d	4p	5s	4d	5p	6s	4f	ecc.
Ferro	Fe	26	2	2	6	2	6	2	6							
Argento	Ag	47	2	2	6	2	6	2	10	6	1	10				
Iodio	I	53	2	2	6	2	6	2	10	6	2	10	5			
Uranio	U	92	2	2	6	2	6	2	10	6	2	10	6	2	14	5d <sup>10</sup> , 6p <sup>6</sup> , 7s <sup>2</sup> , 5f <sup>3</sup> , 6d <sup>1</sup> , 7s <sup>2</sup>
Bario	Ba	56	2	2	6	2	6	2	10	6	2	10	6	2		
Mercurio	Hg	80	2	2	6	2	6	2	10	6	2	10	6	2	14	5d <sup>10</sup>
Radon	Rn	86	2	2	6	2	6	2	10	6	2	10	6	2	14	5d <sup>10</sup> , 6p <sup>6</sup>
Radio	Ra	88	2	2	6	2	6	2	10	6	2	10	6	2	14	5d <sup>10</sup> , 6p <sup>6</sup> , 7s <sup>2</sup>

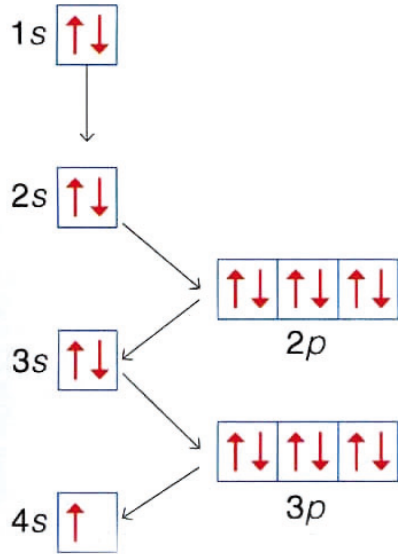
## Pagina 21 Esercizi da risolvere

CONFIGURAZIONE ELETTRONICA	ELETTRONI DI VALENZA	NUMERO ATOMICO	ELEMENTO	SIMBOLO
$1s^2 2s^2 2p^6 3s^2$	2 ( $3s^2$ )	12	Magnesio	Mg
$1s^2 2s^2 2p^4$	6 ( $2s^2 2p^4$ )	8	Ossigeno	O
$1s^2 2s^2 2p^6 3s^1$	1 ( $3s^1$ )	11	Sodio	Na
$1s^2 2s^2 2p^3$	5 ( $2s^2 2p^3$ )	7	Azoto	N
$1s^2 2s^2 2p^6 3s^2 3p^6$	8 ( $3s^2 3p^6$ )	18	Argon	Ar
$1s^2 2s^2 2p^6 3s^2 3p^1$	3 ( $3s^2 3p^1$ )	13	Alluminio	Al
$1s^2 2s^2 2p^1$	3 ( $2s^2 2p^1$ )	5	Boro	B
$1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$	1 ( $4s^1$ )	19	Potassio	K
$1s^2 2s^2 2p^2$	4 ( $2s^2 2p^2$ )	6	Carbonio	C
$1s^2 2s^2 2p^6 3s^2 3p^3$	5 ( $3s^2 3p^3$ )	15	Fosforo	P
$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2$	2 ( $4s^2$ )	20	Calcio	Ca

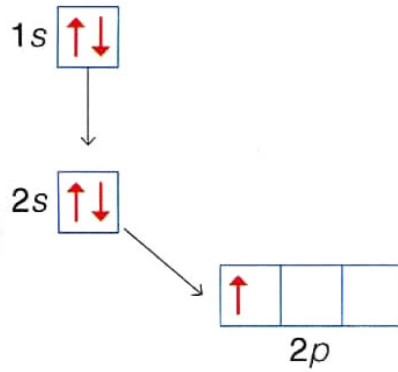
## IV) Esercizi da risolvere

Na  $Z = 11$ N  $Z = 7$

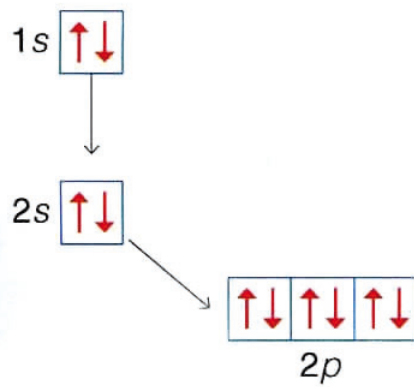
Al  $Z = 13$ Cl  $Z = 17$ O  $Z = 8$ 



K  $Z = 19$

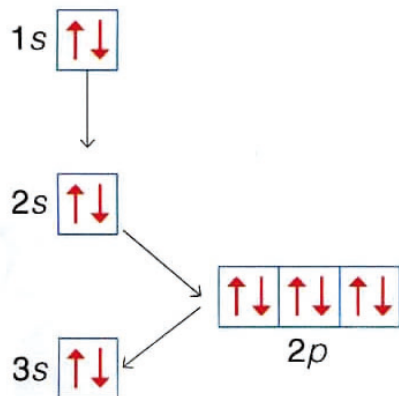


B  $Z = 5$

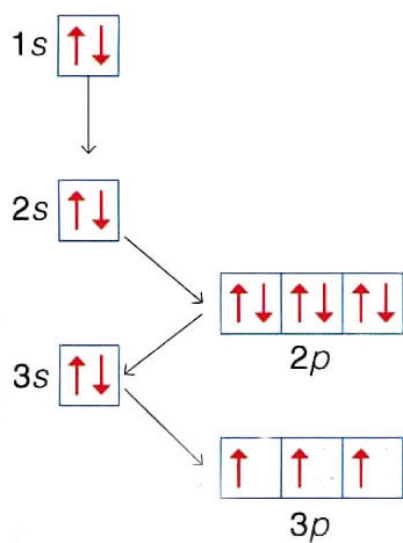


Ne  $Z = 10$

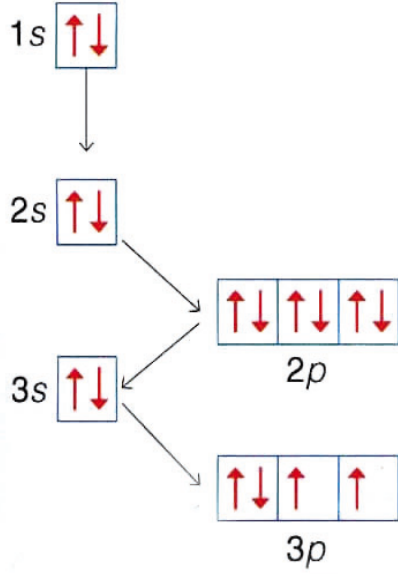
Mg  $Z = 12$



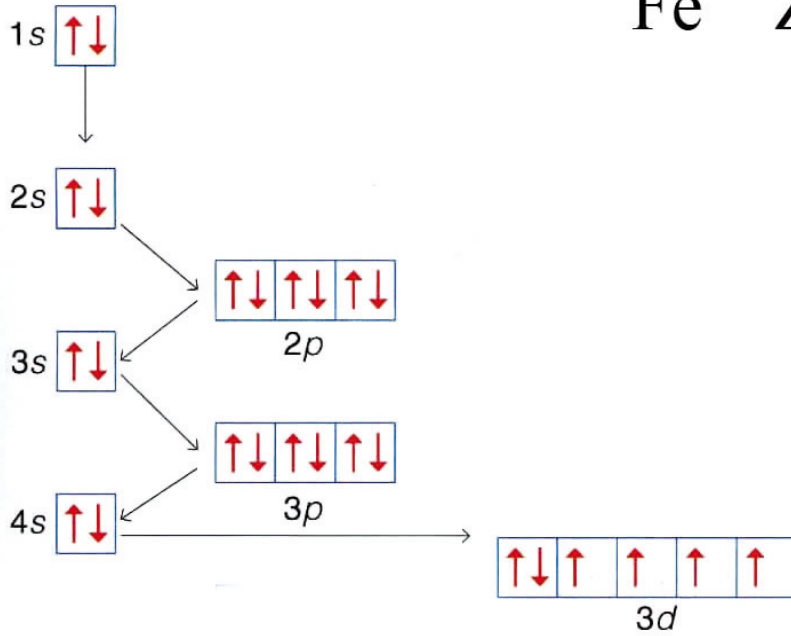
P  $Z = 15$



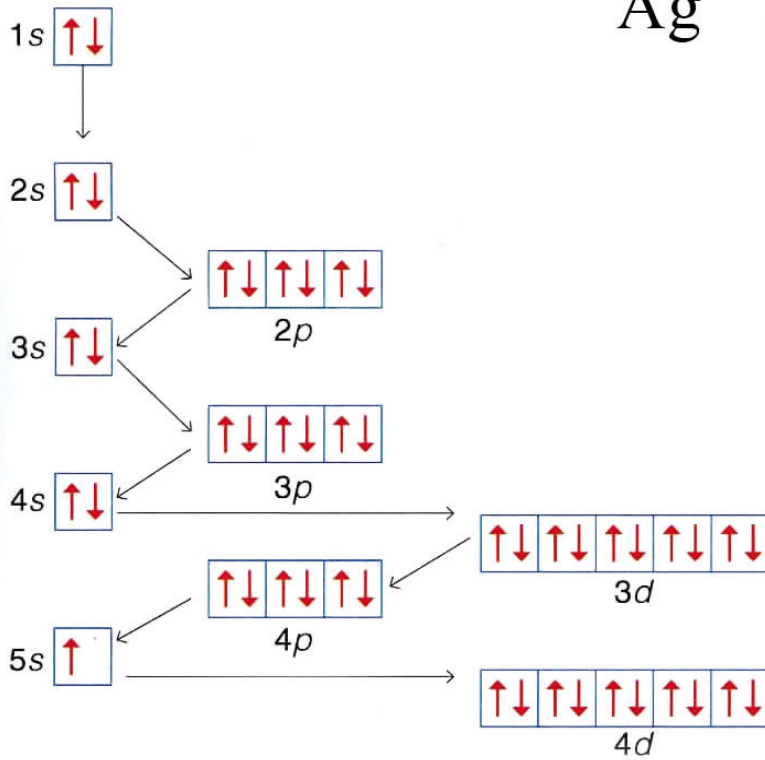
S  $Z = 16$



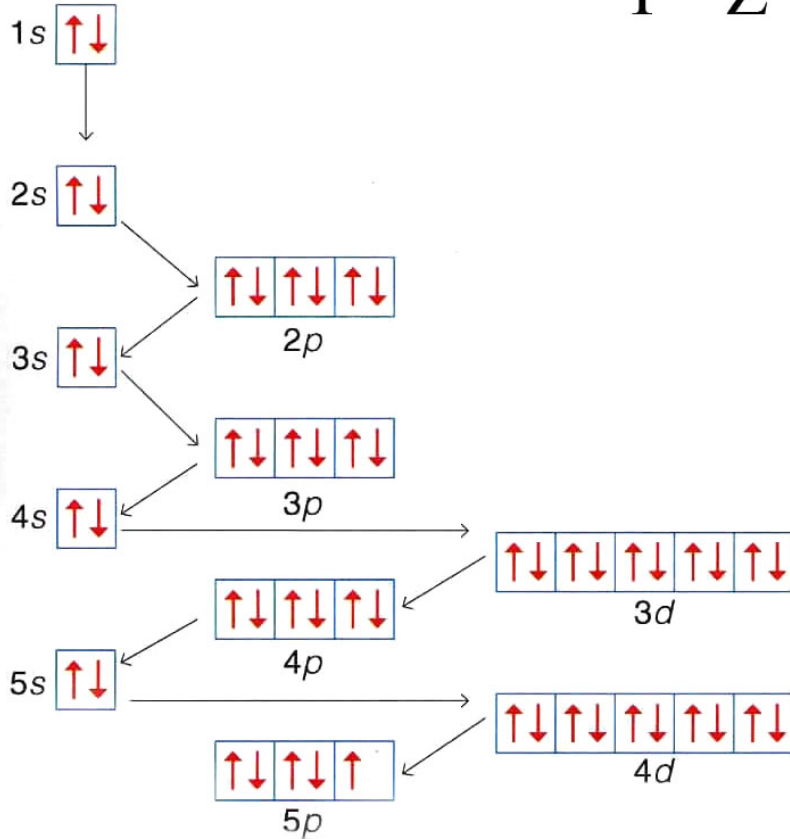
Fe  $Z = 26$



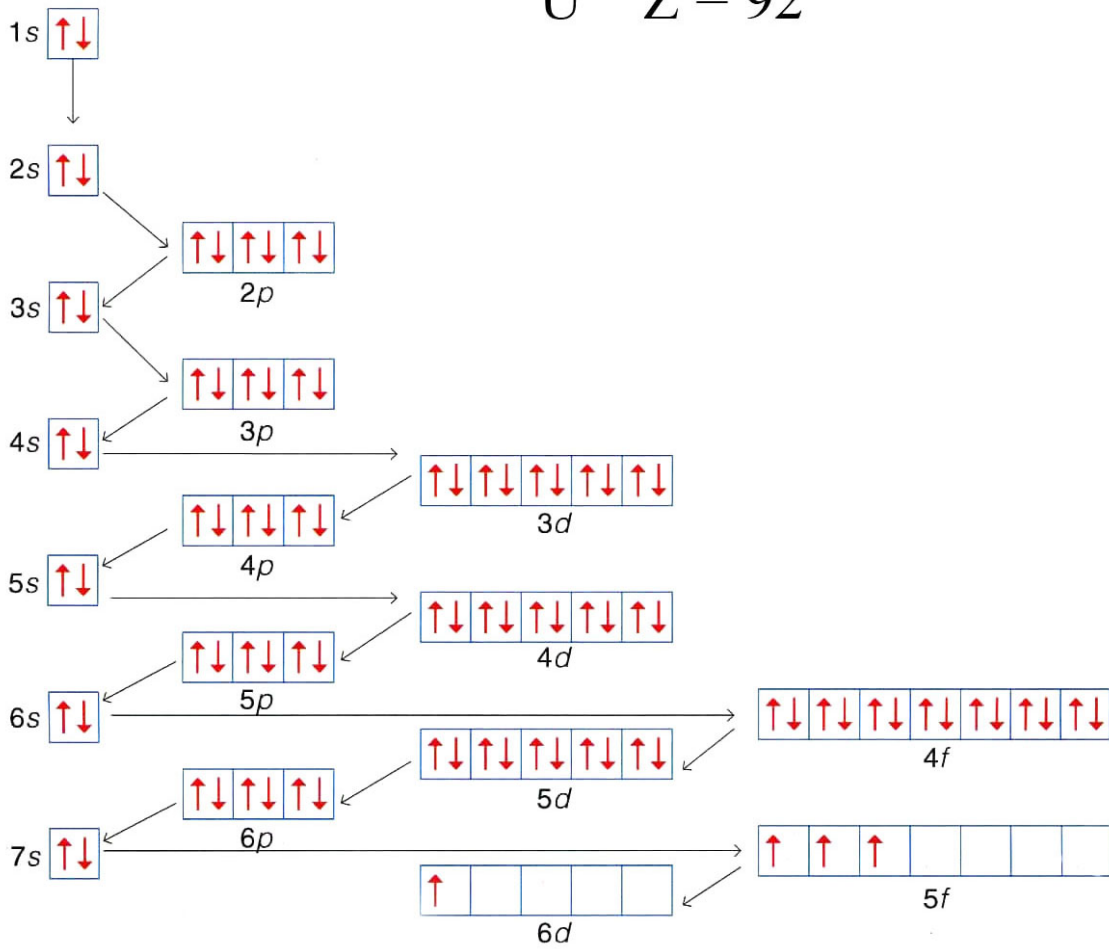
Ag  $Z = 47$



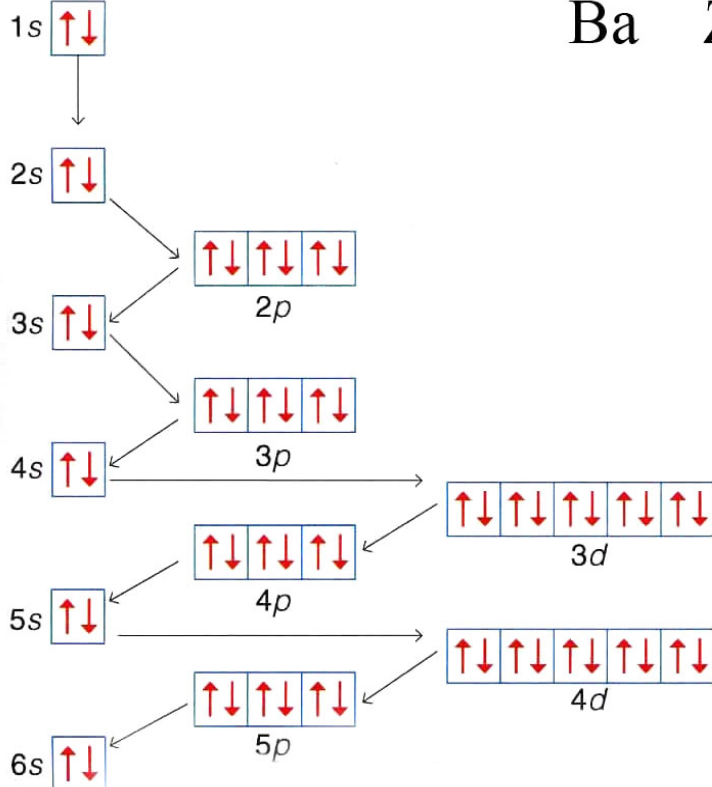
I  $Z = 53$



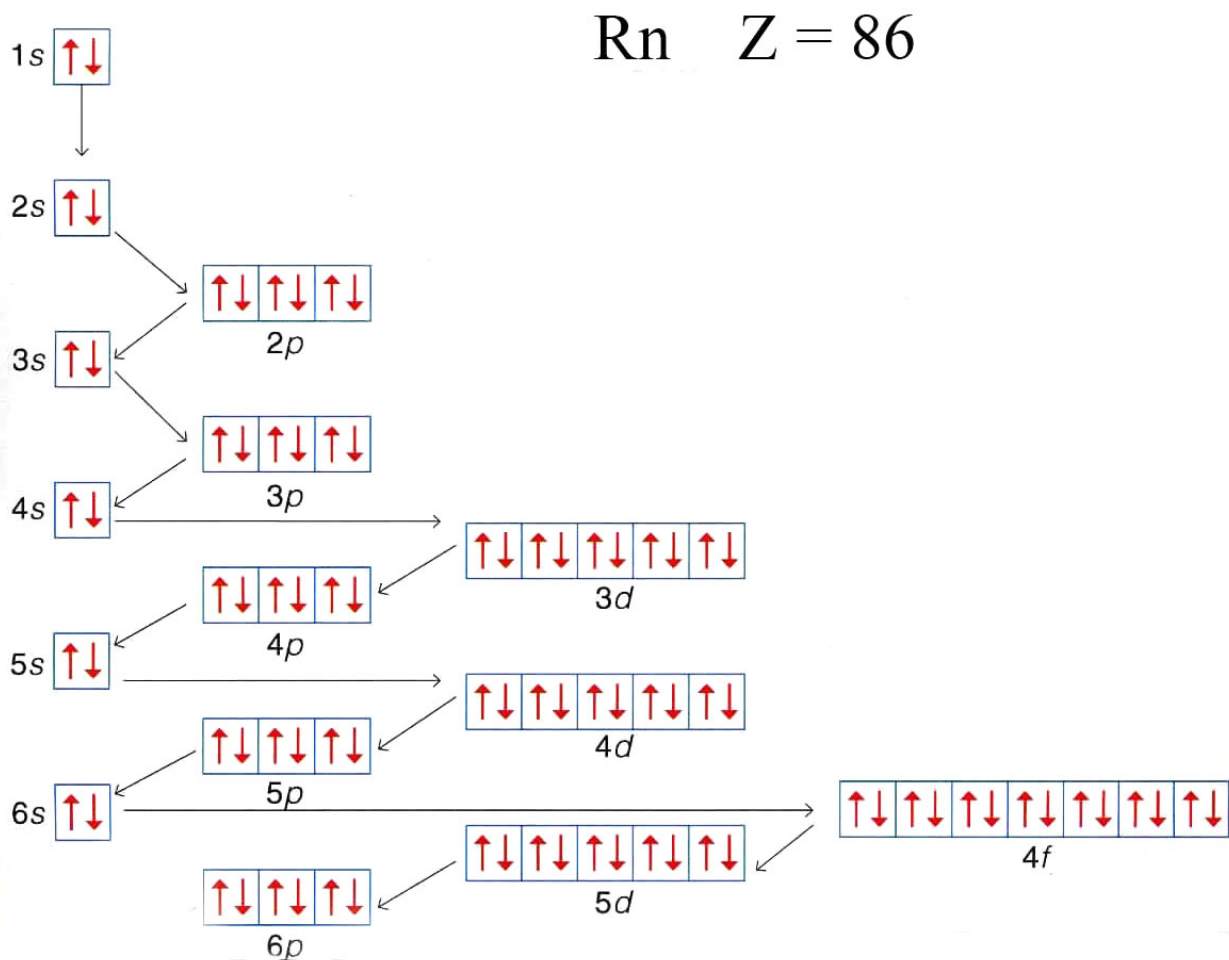
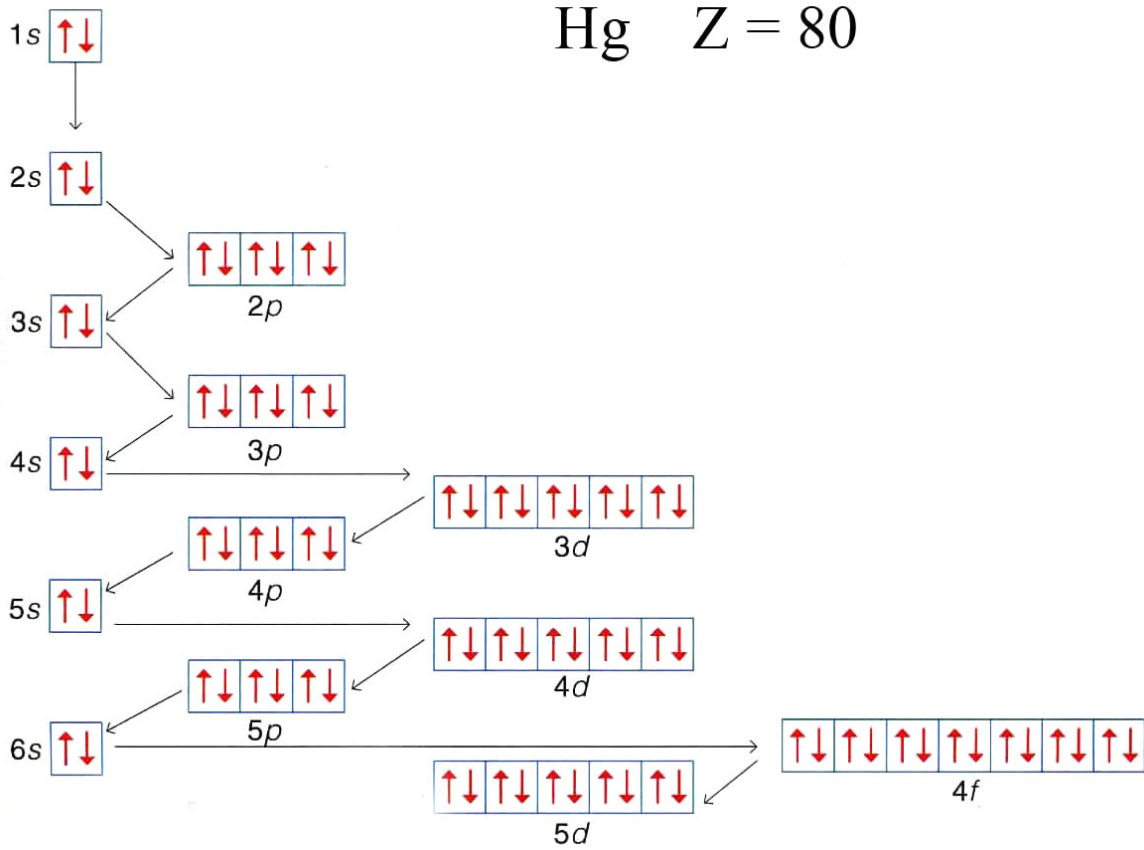
U  $Z = 92$

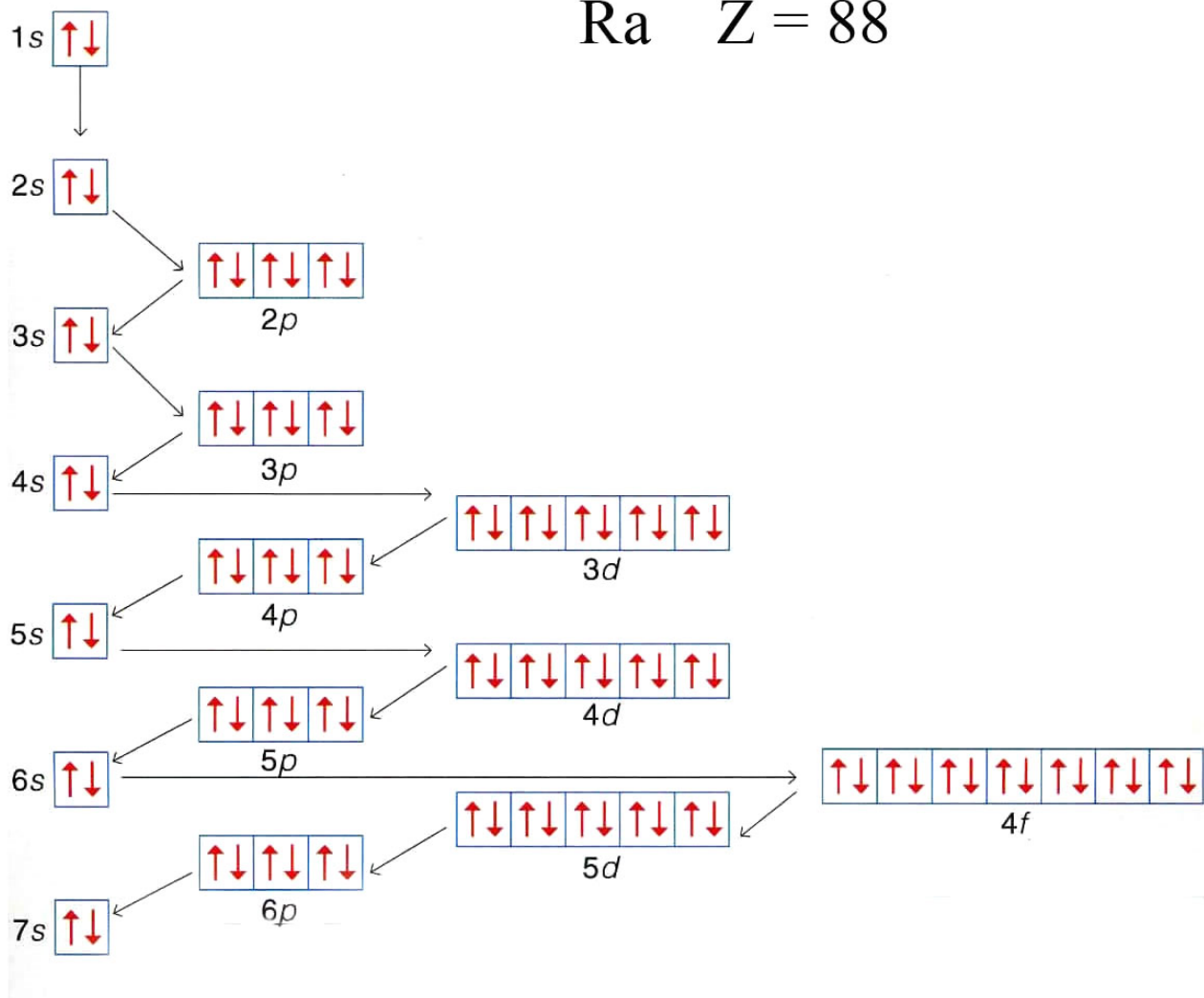


Ba  $Z = 56$







Ra  $Z = 88$ 

### III) Impariamo i simboli degli elementi (per la risposta vedi tavola periodica)

1) A quali elementi corrispondono i seguenti simboli?  
H, C, F, P, S, N, Mg, K, Ag, Au, Co, Na, Ar, Al, Sn, Tc

2) Qual è il simbolo dei seguenti elementi?  
Elio, Ossigeno, Manganese, Rame, Zinco, Calcio, Mercurio; Boro, Sodio, Cloro, Iodio, Bromo, Krypton, Xenon, Radon, Radio, Uranio, Litio, Cromo, Berillio, Ferro, Piombo, Platino, Silicio, Germanio, Antimonio, Tungsteno

#### Pagina 22 Prove strutturate

a) 1) V; 2) F; 3) F; 4) F; 5) F; 6) V; 7) F; 8) F; 9) V; 10) F

b) 1) nucleo; 2) positiva; 3) nucleo; 4) protoni; nucleo; 5) atomico, massa, isotopi; 6) elettroni; 7) elettroni; esterno; 8) due

c) 1) a; 2) c; 3) a; 4) c; 5) c; 6) c; 7) b; 8) c; 9) a; 10) c