QUESTION

- (a) What is the minimum value of / for a subshell that contains 15 electrons?
- (b) If this subshell is in the n=5 shell, what is the spectroscopic notation for this atom?

Answer

A. I = 4, The minimum value of I for a subshell that contains 15 electrons and can take a maximum value of 18 electrons.

B.spectroscopic notation: $5g^{15}(n = 5)$

Explanation

A.
I = 0 (s-subshell) can take maximum 2 electrons
I = 1 (p-subshell) can take maximum 6 electrons
I = 2 (d-subshell) can take maximum 10 electrons
I = 3 (f-subshell) can take maximum 14 electrons
I = 4 (g-subshell) can take maximum 18 electrons.
I = 5 (h-subshell) can take maximum 21 electrons.
The minimum value of 10 r 1 subshell that contains 15 electrons is I = 4
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spectroscopic notation: $5g^{15}(n = 5, l = 4)$