

Question #83239

Identify the pairs among the following that are not isoelectronic:

Na⁺ and O²⁻

P³⁻ and Na⁺

I⁻ and Xe

Na⁺ and Ar

N³⁻ and F⁻

Solution:

Pair	Element/Ion	Electron configuration
Na ⁺ and O ²⁻	Na ⁺	1s ² 2s ² 2p ⁶
	O ²⁻	1s ² 2s ² 2p ⁶
P ³⁻ and Na ⁺	P ³⁻	1s ² 2s ² 2p ⁶ 3s ² 3p ⁶
	Na ⁺	1s ² 2s ² 2p ⁶
I ⁻ and Xe	I	1s ² 2s ² 2p ⁶ 3s ² 3p ⁶ 3d ¹⁰ 4s ² 4p ⁶ 4d ¹⁰ 5s ² 5p ⁶
	Xe	1s ² 2s ² 2p ⁶ 3s ² 3p ⁶ 3d ¹⁰ 4s ² 4p ⁶ 4d ¹⁰ 5s ² 5p ⁶
Na ⁺ and Ar	Na ⁺	1s ² 2s ² 2p ⁶
	Ar	1s ² 2s ² 2p ⁶ 3s ² 3p ⁶
N ³⁻ and F ⁻	N ³⁻	1s ² 2s ² 2p ⁶
	F ⁻	1s ² 2s ² 2p ⁶

Answer:

So, only two pairs among the following are not isoelectronic [1]: P³⁻ and Na⁺, Na⁺ and Ar.

Reference:

[1] <https://en.wikipedia.org/wiki/Isoelectronicity>

Answer provided by www.AssignmentExpert.com