

PDF Quiz 5: Nuclear Models
RDCH 702
Assigned: 3-Oct-18
Due: 6-Oct-18

Last Name: _____
First Name: _____

1. Is the strong force effected by nucleon charge? _____
1.1. Mirror nuclei are used to examine the strong force. Select the mirror nuclei pairs below.

^3H and ^3He ^{20}F and ^{20}N ^{23}Na and ^{23}Ne ^{35}S and ^{35}K ^{51}V and ^{51}Cr

2. Using the shell model and the chart of the nuclides provide the spin and parity of the following isotopes.

Isotope	Spin and Parity from shell model	Spin and Parity from Chart of the Nuclides
^{21}F	_____	_____
^{50}V	_____	_____
^{99}Tc	_____	_____
^{135}Xe	_____	_____
^{137}Xe	_____	_____
^{232}Th	_____	_____
^{235}U	_____	_____
^{238}U	_____	_____
^{238}Pu	_____	_____
^{239}Pu	_____	_____

- 2.1. Compare your results with the actual data. Which isotope or isotopes are non-spherical based on the results?

^{21}F ^{50}V ^{99}Tc ^{135}Xe ^{137}Xe ^{232}Th ^{235}U ^{238}U ^{238}Pu ^{239}Pu

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