

Name: _____

Date: _____

- [3 pt] 1. For each of the 3 key scientists discussed give their name and what they contributed to the field of nuclear chemistry.

- [6 pt] 2. What are 6 differences between chemical and nuclear reactions?

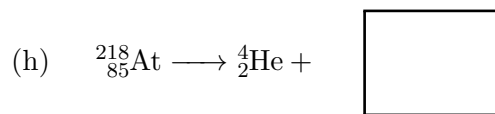
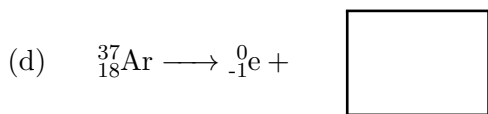
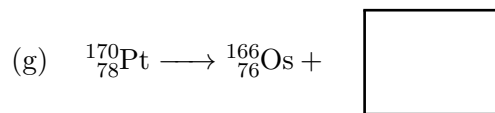
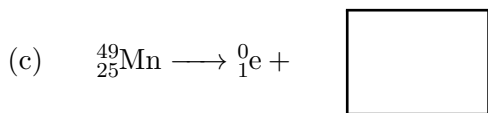
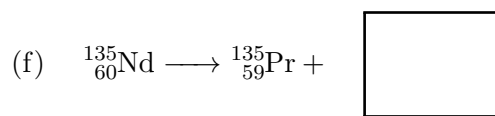
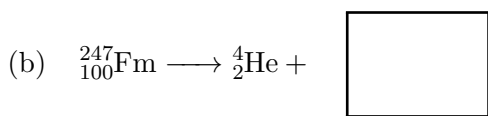
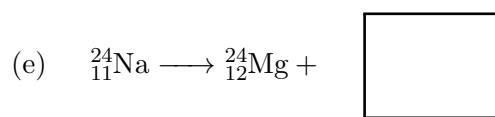
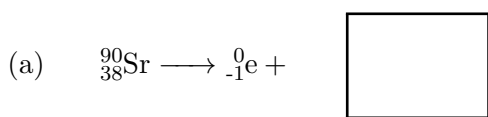
	Chemical Reactions	Nuclear Reactions
Nucleus/e ⁻		
Temp/Pres and Catalyst		
Isotopes		
Compounds		
Energy		
Conservation		

- [3 pt] 3. The chemical reaction of ^{24}Na and $^{24}\text{Na}^+$ ion are very different, yet the nuclear reactions are completely the same (both emit β particles). Explain.

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[4 pt] 4. Draw an example reaction for each of the different types of radioactive decay discussed in class. DO NOT use the examples given in lecture or in the book!

[8 pt] 5. Complete and balance the following nuclear reactions. Additionally for each identify the reaction type.



[6 pt] 6. Write the complete and balanced nuclear reactions for:

(a) Beta Emission of ${}^{157}\text{Eu}$

(b) Electron Capture of ${}^{126}\text{Ba}$

(c) Alpha Emission of ${}^{146}\text{Sm}$