Love of Lab

Name: _____ Date Performed: _____

Group No.: _____ Date Submitted: _____

Section: _____ Rating: _____

Formation of Elements

Complete the following nuclear reactions and identify the cosmic phase (nucleosynthesis, stellar formation and evolution, or stellar explosion) in which the reaction occurred.

Cosmic Phase

1. ${}^{1}_{1}p$ + _____ → ${}^{2}_{1}H$ + ${}^{0}_{0}\gamma$
2. ${}^{3}_{2}He$ + ${}^{2}_{1}H$ → _____ + ${}^{1}_{1}p$
3. ${}^{24}_{12}Mg$ + _____ → ${}^{28}_{14}Si$ + ${}^{0}_{0}\gamma$
4. ${}^{36}_{18}Ar$ + _____ → ${}^{40}_{20}Ca$ + ${}^{0}_{0}\gamma$
5. ${}^{110}_{48}Cd$ + ${}^{1}_{0}n$ → _____
6. ${}^{115}_{48}Cd$ → _____ + ${}^{0}_{-1}\beta$ + ${}^{0}_{0}\gamma$
7. ${}^{12}_{6}C$ + ${}^{4}_{2}He$ → _____ + ${}^{0}_{0}\gamma$
8. ${}^{12}_{6}C$ + ${}^{12}_{6}C$ → ${}^{20}_{10}Ne$ + _____
9. ${}^{2}_{1}H$ + ${}^{1}_{1}p$ → ${}^{3}_{2}He$ + _____
10. ${}^{16}_{8}O$ + ${}^{16}_{8}O$ → ${}^{1}_{1}H$ + _____
11. ${}^{20}_{10}Ne$ + ${}^{4}_{2}He$ → ${}^{24}_{12}Mg$ + _____
12. ${}^{2}_{1}H$ + ${}^{2}_{1}H$ → ${}^{1}_{1}H$ + _____
13. ${}^{56}_{26}Fe$ + $3\,{}^{1}_{0}n$ → _____ + ${}^{0}_{-1}\beta$
14. ${}^{3}_{2}He$ + ${}^{3}_{2}He$ → _____ + $2\,{}^{1}_{1}H$
15. ${}^{56}_{26}Fe$ + 19 _____ → ${}^{75}_{26}Fe$ → ${}^{75}_{33}As$ +

LIVEWORKSHEETS