**Astrophysics Quiz No. 19: How are the chemical elements created?**

1. What is nucleosynthesis?  
   a. The process that creates nucleons and leptons.  
   b. The process that creates atomic nuclei.  
   c. Creation of protons and neutrons without electrons.
2. What process produces all matter including dark matter as predicted by consensus science?
3. Supernovae
4. The Big Bang
5. The atomic fusion process of cores inside stars.
6. What nucleosynthesis process created most of the elements with atomic numbers higher than iron Fe that actively decay?
7. Stellar
8. The hot corona of stars
9. Supernovae
10. Most normal matter is in what form?
11. Plasma
12. Neutral atomic nuclei
13. Mostly leptons that are include electrons, muons, and neutrinos.
14. Why was the Big Bang adopted?
15. 12H, Li, Be, B and a high amount of He cannot be produced inside stars.
16. The existence of deuterium, an isotope of hydrogen
17. Existence of nuclides between helium & carbon in the periodic table.
18. All the above.
19. What is the primary source in present time of the initial Big Bang elements: Li, Be, and B?
20. Meteorites.
21. Comets.
22. Cosmic rays
23. All the above.

**Chief Nuclear Reactions During the Big Bang**A group of black symbols

Description automatically generated with medium confidence

* Production of the first matter is neutrons (n0)
* Neutrons split to create protons, p+, and electrons / neutrinos, e- / ѵe
* A proton + neutron combine to form a hydrogen isotope 21D (deuterium) & a photon.
* 21D (deuterium) + proton( p+ ), produces helium isotope, 32He, and a photon.
* Another sequence of combinations eventually creates small amounts of Li Be and B.

**Answers: 1.- b; 2.- b; 3.- c; 4.- a; 5.- d; 6. - g**