Name_____Class_____Date_____

Nuclear

ACROSS

1 April 26, 1986 headline news topic.

3 The 99m isotope of it is used for more than 70% of all nuclear medicine tests worldwide.

5 Acronym mentioned in (A) American Journal of Roentgenology, (B) Journal of the American Psychoanalytic Association, and (C) Billboard Magazine

6 There are more of them in a pound of D_2O than in a pound of H_2O.

7 The mass of an alpha particle, in amu.

8 Number of beta particles emitted when an atom of Co-60 decays to Ni-60.

12 Charge of the ejected particles that result from the fusion of four H-1 nuclei to form one He-4 nucleus.

15 "We readily proved that pitch-blende contains very radioactive substances, and that there were at least three. That which accompanies the bismuth extracted from pitch-blende we named Polonium; that which accompanies barium from the same source we named Radium; finally, M. Debierne gave the name of Actinium to a substance which is found in the rare earths obtained from the same ore."

16 A $^{90}Sr^{+2}$ ion has 38 of them.

18 Co-60 emission.

19 They have less energy than gamma rays, but more than FM.

DOWN

1 Metal used for neutron absorption in nuclear power plant control rods.

2 He studied alpha particle scattering.

4 Exposure to this element caused a downed aviator to become a 50 foot tall giant with only one eye in the 1956 movie, "The Cyclops," starring Lon Chaney Jr.

7 Number of half-lives it would take an 800 Ci source of Tc-99m to decay down to 25 Ci.

9 Source of energy at the Springfield Nuclear Power Plant, which is owned by Charles Montgomery Burns.

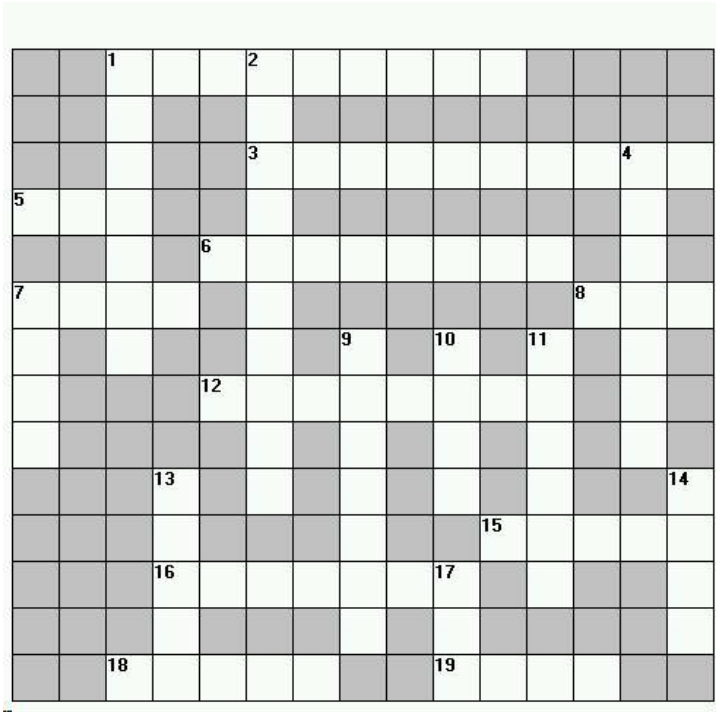
10 Number of protons in a fluoride ion nucleus.

11 The second most abundant element in the universe.

13 Rutherford aimed it at N-14 to produce O-17 and H-1.

14 When this is given off, a neutron is converted into a proton.

17 Number of hours it would take 2 mCi of Tc-99m to decay to 1 mCi.



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