

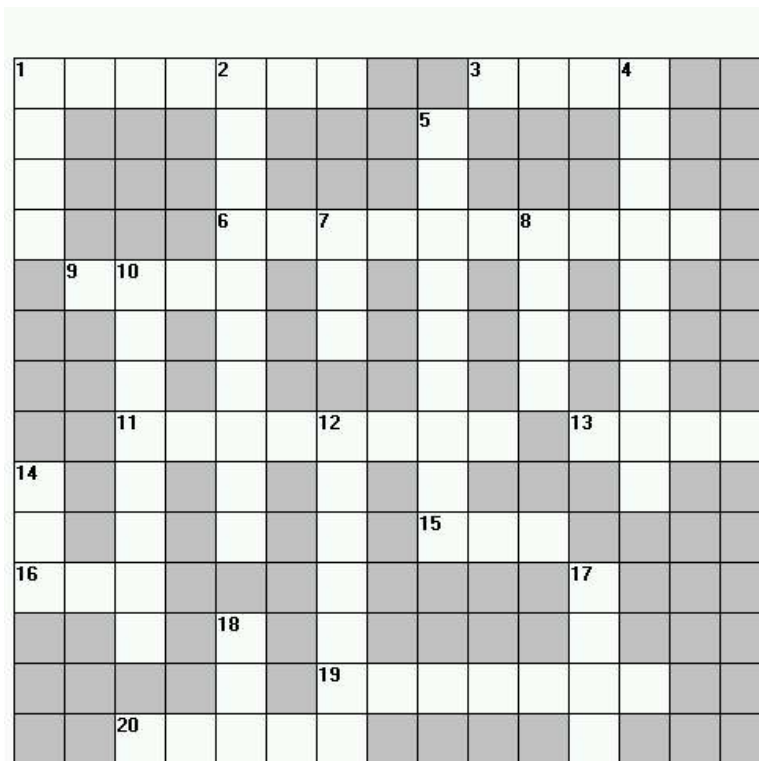
Atomic Structure

ACROSS

- 1 It has a mass of 1.67495×10^{-24} g.
- 3 Material used as alpha particle target by 2-Down.
- 6 There is always some uncertainty about the position and momentum of an electron.
- 9 Number of outer energy electrons shown in the electron dot diagram of phosphorus.
- 11 "The smallness of the value of m/e is, I think, due to the largeness of e as well as the smallness of m . There seems to me to be some evidence that the charges carried by the corpuscles in the atom are large compared with those carried by the ions of an electrolyte." *Philosophical Magazine*, 44, 293 (1897).
- 13 Corrosion-resistant transition element with a full d sublevel, and two outer 4s electrons available for reacting.
- 15 Number of protons in an atom of carbon-14.
- 16 Number of 3p electrons in an atom of aluminum.
- 19 It's the part of a hydrogen atom that contains about 1836/1837 of the mass of the atom.
- 20 Useful tool for picking up hot crucibles.

DOWN

- 1 Atomic number of the most electronegative element.
- 2 See 3-Across.
- 4 Wavelength is inversely proportional to momentum.
- 5 Cathode rays.
- 7 (12-Down) X 9, (1-Across) X 9, (5-Down) X 10.
- 8 Student of 2-Down.
- 10 Deuterium and tritium.
- 12 Mendeleev didn't know they existed in 1869.
- 14 Number of 3d electrons in a ground state titanium atom.
- 17 Number of 3p electrons in a ground state sulfur atom.
- 18 Number of electrons in a magnesium ion.



Name _____ Class _____ Date _____

Atomic Structure

¹ N	E	U	T	² R	O	N		³ G	O	L	⁴ D		
I				U			⁵ E				E		
N				T			L				B		
E			⁶ H	E	⁷ I	S	E	N	⁸ B	E	R	G	
⁹ F	¹⁰ I	V	E		O		C		O		O		
		S	R		N		T		H		G		
		O	F				R		R		L		
	¹¹ T	H	O	M	¹² P	S	O	N		¹³ Z	I	N	C
¹⁴ T		O		R		R		N			E		
W		P		D		O	¹⁵ S	I	X				
¹⁶ O	N	E				T					¹⁷ F		
		S		¹⁸ T		O					O		
				E	¹⁹ N	U	C	L	E	U	S		
	²⁰ T	O	N	G	S					R			