

Name: _____ Date: _____

Atomic Structure & Isotope

Part A: Atomic Structure

1. Complete the following table.

Element name	Atomic number	Mass number	Number of protons	Number of electrons	Number of neutrons	Element symbol
		70				
	48					
				80		
			35			

2. Identify the neutral atom described by name and mass number (example, oxygen-16).

i) The atom with 2 neutrons and 1 proton is _____.

ii) The atom with 17 electrons and 18 neutrons is _____.

iii) The atom with 6 protons and 8 neutrons is _____.

Part B: Isotope

1. Complete the following table.

Symbol	# of protons	# of neutrons	# of electrons	Symbol	# of protons	# of neutrons	# of electrons
${}^1\text{H}_1$				${}^{17}\text{O}_8$			
${}^2\text{H}_1$				${}^{39}\text{K}_{19}$			
${}^4\text{He}_2$				${}^{40}\text{Ca}_{20}$			
${}^5\text{He}_2$				${}^{235}\text{U}_{92}$			
${}^6\text{Li}_3$				${}^{244}\text{Pu}_{94}$			
${}^7\text{Li}_3$				${}^{56}\text{Fe}_{26}^{3+}$			

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Answers

Part A: Atomic Structure

1. Complete the following table.

Element name	Atomic number	Mass number	Number of protons	Number of electrons	Number of neutrons	Element symbol
Zinc	30	70	30	30	40	Zn
Cadmium	48	112	48	48	64	Cd
Mercury	80	201	80	80	121	Hg
Bromine	35	80	35	35	45	Br

2. Identify the neutral atom described by name and mass number (example, oxygen-16).

- i) The atom with 2 neutrons and 1 proton is hydrogen-3 .
- ii) The atom with 17 electrons and 18 neutrons is chlorine-35 .
- iii) The atom with 6 protons and 8 neutrons is carbon-14 .

Part B: Isotope

1. Complete the following table.

Symbol	# of protons	# of neutrons	# of electrons	Symbol	# of protons	# of neutrons	# of electrons
${}^1\text{H}_1$	1	0	1	${}^{17}\text{O}_8$	8	9	8
${}^2\text{H}_1$	1	1	1	${}^{39}\text{K}_{19}$	19	20	19
${}^4\text{He}_2$	2	2	2	${}^{40}\text{Ca}_{20}$	20	20	20
${}^5\text{He}_2$	2	3	2	${}^{235}\text{U}_{92}$	92	143	92
${}^6\text{Li}_3$	3	3	3	${}^{244}\text{Pu}_{94}$	94	150	94
${}^7\text{Li}_3$	3	4	3	${}^{56}\text{Fe}_{26}^{3+}$	26	30	23