

Name : _____ Date : _____

Atomic Structure Worksheet

- ① Identify the each of the parts of the box and fill in the blank.

8
O
Oxygen
15.999

← _____
← _____
← _____
← _____

Atomic number = _____
Atomic mass = _____
of protons = _____
of electrons = _____
of neutrons = _____

- ② How many protons and neutrons are present in an atom of titanium (Mass number = 48)?

Protons = _____ Neutrons = _____

- ③ What is the mass number, symbol, and charge of an ion that contains 87 protons, 136 neutrons, and 86 electrons?

Mass number = _____ Symbol = _____ Charge = _____

- ④ Write the complete name and chemical symbol for the ion with 37 protons, 48 neutrons, and 36 electrons. _____

- ⑤ How many protons, neutrons, and electrons are present in the $^{93}\text{Nb}^{+3}$ ion?

Protons = _____ Electrons = _____ Neutrons = _____

- ⑥ How many protons, neutrons, and electrons are present in the $^{141}\text{Ce}^{+4}$ ion?

Protons = _____ Electrons = _____ Neutrons = _____

- ⑦ An atom with an atomic number of 7 and a mass number of 14 is which element?

i) H ii) N iii) O iv) P

- ⑧ Usually, the atom described in Problem 7 will have how many electrons?

i) 4 ii) 7 iii) 8 iv) 15

- ⑨ A neutral atom of copper has how many electrons?

i) 15 ii) 18 iii) 26 iv) 29

- ⑩ What is the atomic mass in amu of an atom that has 14 protons, 14 electrons, and 14 neutrons?

i) 14 ii) 28 iii) 42 iv) 56

Name : _____ Date : _____

Atomic Structure Worksheet

Answers

- ① Identify the each of the parts of the box and fill in the blank.

8	←	<u>Atomic number</u>	Atomic number = <u>8</u>
O	←	<u>Symbol</u>	Atomic mass = <u>15.999 amu</u>
Oxygen	←	<u>Name of the atom</u>	# of protons = <u>8</u>
15.999	←	<u>Atomic mass</u>	# of electrons = <u>8</u>
			# of neutrons = <u>8</u>

- ② How many protons and neutrons are present in an atom of titanium (Mass number = 48)?

Protons = 22 Neutrons = 26

- ③ What is the mass number, symbol, and charge of an ion that contains 87 protons, 136 neutrons, and 86 electrons?

Mass number = 223 Symbol = Fr Charge = +1

- ④ Write the complete name and chemical symbol for the ion with 37 protons, 48 neutrons, and 36 electrons. Rubidium - 85^{85}Rb^+

- ⑤ How many protons, neutrons, and electrons are present in the $^{93}\text{Nb}^{+3}$ ion?

Protons = 41 Electrons = 38 Neutrons = 52

- ⑥ How many protons, neutrons, and electrons are present in the $^{141}\text{Ce}^{+4}$ ion?

Protons = 58 Electrons = 54 Neutrons = 83

- ⑦ An atom with an atomic number of 7 and a mass number of 14 is which element?

i) H ii) **N** iii) O iv) P

- ⑧ Usually, the atom described in Problem 7 will have how many electrons?

i) 4 ii) **7** iii) 8 iv) 15

- ⑨ A neutral atom of copper has how many electrons?

i) 15 ii) 18 iii) 26 iv) **29**

- ⑩ What is the atomic mass in amu of an atom that has 14 protons, 14 electrons, and 14 neutrons?

i) 14 ii) **28** iii) 42 iv) 56