

Subatomic Particles

Apprentice Difficulty Level

Question 1

Complete the following table:

Name of Particle	Symbol	Atomic #	Mass #	# of p ⁺	# of n	# of e ⁻	Charge
Beryllium-9 atom	${}^7_3\text{Be}$						0
Fluorine-19 atom	${}^{19}_9\text{F}$						0
Sodium-23 atom	${}^{23}_{11}\text{Na}$					11	
Copper-65 atom	${}^{65}_{29}\text{Cu}$						0
Selenium-79 atom	${}^{79}_{34}\text{Se}$					34	

Question 2

Name of Particle	Symbol	Atomic #	Mass #	# of p ⁺	# of n	# of e ⁻	Charge
Lithium-7 atom	${}^7_3\text{Li}$						0
Oxygen-17 atom	${}^{17}_8\text{O}$						0
Magnesium-23 atom	${}^{23}_{12}\text{Mg}$					12	
Iron-56 atom	${}^{56}_{26}\text{Fe}$						0
Arsenic-75 atom	${}^{75}_{33}\text{As}$					33	

Question 3

Name of Particle	Symbol	Atomic #	Mass #	# of p ⁺	# of n	# of e ⁻	Charge
Boron-11 atom	$^{11}_5\text{B}$						0
Nitrogen-15 atom	$^{15}_7\text{N}$						0
Aluminum-27 atom	$^{27}_{13}\text{Al}$					13	
Chromium-52 atom	$^{52}_{24}\text{Fe}$						0
Bromine-80 atom	$^{80}_{35}\text{Br}$					35	

Question 4

Name of Particle	Symbol	Atomic #	Mass #	# of p ⁺	# of n	# of e ⁻	Charge
Carbon-14 atom	$^{14}_6\text{C}$						0
Neon-19 atom	$^{19}_{10}\text{Ne}$						0
Silicon-30 atom	$^{30}_{14}\text{Si}$					14	
Titanium-48 atom	$^{48}_{22}\text{Ti}$						0
Bromine-79 atom	$^{79}_{35}\text{Br}$					35	

Master Difficulty Level
Question 5

Name of Particle	Symbol	Atomic #	Mass #	# of p ⁺	# of n	# of e ⁻	Charge
Calcium-39 ion	$^{39}_{20}\text{Ca}^{2+}$						+2
Titanium-48 ion	$^{48}_{22}\text{Ti}^{2+}$						+2
Copper-65 ion	$^{65}_{29}\text{Cu}$					27	
Silver-108 ion	$^{108}_{47}\text{Ag}^{+}$						+1
Tin-120 ion	$^{79}_{50}\text{Sn}$					46	

Question 6

Name of Particle	Symbol	Atomic #	Mass #	# of p ⁺	# of n	# of e ⁻	Charge
Strontium-88 ion	$^{88}_{38}\text{Sr}^{2+}$						+2
Vanadium-51 ion	$^{51}_{23}\text{V}^{3+}$						+3
Iron-55 ion	$^{55}_{26}\text{Fe}$					23	
Cadmium-112 ion	$^{112}_{48}\text{Cd}^{2+}$						+2
Lead-210 ion	$^{210}_{82}\text{Pb}$					80	

Question 7

Name of Particle	Symbol	Atomic #	Mass #	# of p ⁺	# of n	# of e ⁻	Charge
Rubidium-85 ion	$^{85}_{37}\text{Rb}^+$						+1
Manganese-55 ion	$^{55}_{25}\text{Mn}^{2+}$						+2
Iron-56 ion	$^{56}_{26}\text{Fe}$					24	
Palladium-106 ion	$^{106}_{46}\text{Pd}^{2+}$						+2
Tin-118 ion	$^{118}_{50}\text{Sn}$					48	

Question 8

Name of Particle	Symbol	Atomic #	Mass #	# of p ⁺	# of n	# of e ⁻	Charge
Potassium-40 ion	$^{40}_{19}\text{K}^+$						+1
Scandium-47 ion	$^{47}_{21}\text{Sc}^{3+}$						+3
Copper-65 ion	$^{64}_{29}\text{Cu}$					28	
Palladium-106 ion	$^{106}_{46}\text{Pd}^{2+}$						+2
Lead-208 ion	$^{208}_{82}\text{Pb}$					78	

Wizard Difficulty Level
Question 9

Name of Particle	Symbol	Atomic #	Mass #	# of p ⁺	# of n	# of e ⁻	Charge
Sodium-23 ion	Na						
Aluminum-27 ion	Al						
Sulfur-32 ion	S						
Strontium-90 ion	Sr						
Iodine-127 ion	I						

Question 10

Name of Particle	Symbol	Atomic #	Mass #	# of p ⁺	# of n	# of e ⁻	Charge
Magnesium-23 ion	Mg						
Phosphorus-31 ion	P						
Chlorine-36 ion	Cl						
Barium-138 ion	Ba						
Iodine-131 ion	I						

Question 11

Name of Particle	Symbol	Atomic #	Mass #	# of p⁺	# of n	# of e⁻	Charge
Calcium-39 ion	Ca						
Phosphorus-32 ion	P						
Bromine-80 ion	Br						
Strontium-88 ion	Sr						
Iodine-128 ion	I						

Question 12

Name of Particle	Symbol	Atomic #	Mass #	# of p⁺	# of n	# of e⁻	Charge
Beryllium-9 ion	Be						
Nitrogen-15 ion	N						
Selenium-78 ion	Se						
Rubidium-85 ion	Rb						
Barium-139 ion	Ba						