

- At STP, which element is a good conductor of electricity?
A) chlorine B) iodine
C) silver D) sulfur
- Which elements have the most similar chemical properties?
A) Si, As, and Te B) N₂, O₂, and F₂
C) Mg, Sr, and Ba D) Ca, Cs, and Cu
- A solid element that is malleable, a good conductor of electricity, and reacts with oxygen is classified as a
A) metal B) metalloid
C) noble gas D) nonmetal
- Which element is a liquid at 305 K and 1.0 atmosphere?
A) magnesium B) fluorine
C) gallium D) iodine
- Which elements are malleable and good conductors of electricity?
A) iodine and silver B) iodine and xenon
C) tin and silver D) tin and xenon
- Which element has the highest melting point?
A) tantalum B) rhenium
C) osmium D) hafnium
- Which Group 14 element is classified as a metal?
A) carbon B) germanium
C) silicon D) tin
- An element that has a low first ionization energy and good conductivity of heat and electricity is classified as a
A) metal B) metalloid
C) nonmetal D) noble gas
- A sample of an element is malleable and can conduct electricity. This element could be
A) H B) He C) S D) Sn
- Which two characteristics are associated with metals?
A) low first ionization energy and low electronegativity
B) low first ionization energy and high electronegativity
C) high first ionization energy and low electronegativity
D) high first ionization energy and high electronegativity
- Which element is malleable and can conduct electricity in the solid phase?
A) iodine B) phosphorus
C) sulfur D) tin
- An element that is malleable and a good conductor of heat and electricity could have an atomic number of
A) 16 B) 18 C) 29 D) 35
- The elements located in the lower left corner of the Periodic Table are classified as
A) metals B) nonmetals
C) metalloids D) noble gases
- Which element is malleable and conducts electricity?
A) iron B) iodine
C) sulfur D) phosphorus
- Which statement describes a chemical property of iron?
A) Iron can be flattened into sheets.
B) Iron conducts electricity and heat.
C) Iron combines with oxygen to form rust.
D) Iron can be drawn into a wire.
- Which of these elements is the best conductor of electricity?
A) S B) N C) Br D) Ni

17. What is a property of most metals?
- A) They tend to gain electrons easily when bonding.
 - B) They tend to lose electrons easily when bonding.
 - C) They are poor conductors of heat.
 - D) They are poor conductors of electricity.
18. Which elements have the most similar chemical properties?
- A) boron and carbon
 - B) oxygen and sulfur
 - C) aluminum and bromine
 - D) argon and silicon
19. Which two gases can *not* be broken down by chemical means?
- A) CO and He
 - B) CO and NH₃
 - C) Xe and He
 - D) Xe and NH₃
20. The element sulfur is classified as a
- A) metal
 - B) metalloid
 - C) nonmetal
 - D) noble gas
21. Which element has atoms that can bond to each other in rings and networks?
- A) aluminum
 - B) carbon
 - C) hydrogen
 - D) oxygen
22. Which element has chemical properties that are most similar to the chemical properties of fluorine?
- A) boron
 - B) chlorine
 - C) neon
 - D) oxygen
23. At STP, which element is solid, brittle, and a poor conductor of electricity?
- A) Al
 - B) K
 - C) Ne
 - D) S
24. Which element is classified as a nonmetal?
- A) Be
 - B) Al
 - C) Si
 - D) Cl
25. Which is a property of most nonmetallic solids?
- A) high thermal conductivity
 - B) high electrical conductivity
 - C) brittleness
 - D) malleability
26. What are two properties of most nonmetals?
- A) high ionization energy and poor electrical conductivity
 - B) high ionization energy and good electrical conductivity
 - C) low ionization energy and poor electrical conductivity
 - D) low ionization energy and good electrical conductivity
27. A characteristic of a nonmetal is
- A) low ionization energy
 - B) high electronegativity
 - C) high electrical conductivity
 - D) the ability to form positive ions
28. In which area of the Periodic Table are the elements with the strongest nonmetallic properties located?
- A) lower left
 - B) upper left
 - C) lower right
 - D) upper right

29. The table below shows some properties of elements *A*, *B*, *C*, and *D*.

Element	Ionization Energy	Electronegativity	Conductivity of Heat and Electricity
<i>A</i>	low	low	low
<i>B</i>	low	low	high
<i>C</i>	high	high	low
<i>D</i>	high	high	high

Which element is most likely a nonmetal?

- A) *A* B) *B* C) *C* D) *D*

30. Which properties are characteristic of non-metals?

- A) low thermal conductivity and low electrical conductivity
B) low thermal conductivity and high electrical conductivity
C) high thermal conductivity and low electrical conductivity
D) high thermal conductivity and high electrical conductivity

31. Which element is an active nonmetal?

- A) neon B) oxygen
C) zinc D) chromium

32. Which Group 14 element is a metalloid?

- A) tin B) silicon
C) lead D) carbon

33. Which element is a metalloid?

- A) Al B) Ar C) As D) Au

34. Which element has both metallic and nonmetallic properties?

- A) Rb B) Rn C) Si D) Sr

35. Which isotopic notation identifies a metalloid that is matched with the corresponding number of protons in each of its atoms?

- A) ^{24}Mg and 12 protons
B) ^{28}Si and 14 protons
C) ^{75}As and 75 protons
D) ^{80}Br and 80 protons

36. Germanium is classified as a

- A) metal B) metalloid
C) nonmetal D) noble gas

37. Which pair of symbols represents a metalloid and a noble gas?

- A) Si and Bi B) As and Ar
C) Ge and Te D) Ne and Xe

38. Which list of elements contains *two* metalloids?

- A) Si, Ge, Po, Pb B) As, Bi, Br, Kr
C) Si, P, S, Cl D) Po, Sb, I, Xe

39. Antimony is classified as a

- A) metal B) nonmetal
C) metalloid D) noble gas

40. Pure silicon is chemically classified as a metalloid because silicon

- A) is malleable and ductile
B) is an excellent conductor of heat and electricity
C) exhibits metallic and nonmetallic properties
D) none of the above

41. Which list of elements contains two metalloids (semimetals)?

- A) Ga, Ge, Sn B) Si, P, S
C) C, Si, Ge D) B, C, N

42. The element arsenic (As) has the properties of

- A) metals, only
B) nonmetals, only
C) both metals and nonmetals
D) neither metals nor nonmetals

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43. The properties of silicon are characteristics of
- A) a metal, only
 - B) a nonmetal, only
 - C) both a metal and a nonmetal
 - D) neither a metal nor a nonmetal
44. Which statement explains why neon is a Group 18 element?
- A) Neon is a gas at STP.
 - B) Neon has a low melting point.
 - C) Neon atoms have a stable valence electron configuration.
 - D) Neon atoms have two electrons in the first shell.
45. An atom of argon in the ground state tends *not* to bond with an atom of a different element because the argon atom has
- A) more protons than neutrons
 - B) more neutrons than protons
 - C) a total of two valence electrons
 - D) a total of eight valence electrons
46. Which element is a noble gas?
- A) krypton
 - B) chlorine
 - C) antimony
 - D) manganese
47. Which group in the Periodic Table contains elements that are all monatomic gases at STP?
- A) 15
 - B) 16
 - C) 17
 - D) 18
48. The number of atoms in a molecule of helium is
- A) 1
 - B) 2
 - C) 3
 - D) 4
49. At STP, which substance is a noble gas?
- A) ammonia
 - B) chlorine
 - C) neon
 - D) nitrogen
50. Which group on the Periodic Table has elements with atoms that tend not to bond with atoms of other elements?
- A) Group 1
 - B) Group 2
 - C) Group 17
 - D) Group 18
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