



Name _____ Class _____ Date _____

1 Pure silicon is chemically classified as a **metalloid** because silicon

14
Si
Silicon

- A is malleable and ductile
- B is an excellent conductor of heat and electricity
- C exhibits hydrogen bonding
- D exhibits metallic and nonmetallic properties

2 In which group of elements do most atoms have **completely filled** s and p valence sublevels?

- A halogens
- B noble gases
- C alkali metals
- D alkaline earth metals

2	He	1
10	Ne	2
18	Ar	3
36	Kr	4
54	Xe	5
86	Rn	6

3 Which properties are most common in **nonmetals**?

- A low ionization energy and low electronegativity
- B low ionization energy and high electronegativity
- C high ionization energy and low electronegativity

4 Within **Period 2** of the Periodic Table, as the **atomic number increases**, the **atomic radius** generally

- A decreases
- B increases
- C remains the same

2	Li	Be	B	C	N	O	F	Ne										
3	Na	Mg	Al	Si	P	S	Cl	Ar										
4	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Cobalt	Nickel	Cu	Zn	Ga	Ge	As	Se	Br	Kr
5	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
6	Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
7	Fr	Ra	Ac	Rf	Db	Sg	Bh	Hs	Mt	Uu	Uub	Uut	Uuq	Uur	Uus	Uuo	Uuq	Uur

PREVIEW

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8

13	Al	Si	P	S	Cl	Ar
31	Ga	Ge	As	Se	Br	Kr
49	In	Sn	Sb	Te	I	Xe
81	Tl	Pb	Bi	Po	At	Rn

9

13	Al	Si	P	S	Cl	Ar
31	Ga	Ge	As	Se	Br	Kr
49	In	Sn	Sb	Te	I	Xe
81	Tl	Pb	Bi	Po	At	Rn

9 Which characteristic describes most **nonmetals** in the **solid phase**?

- A good conductors of electricity
- B good conductors of heat
- C malleable
- D brittle

10 The element in **Group 14, Period 3** on the Periodic Table is classified as a

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

2	He	1
10	Ne	2
18	Ar	3
36	Kr	4
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86	Rn	6



ANSWER KEY

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 hydrogen bonding
- D** exhibits metallic and nonmetallic properties



(d)

In which group of elements do most atoms have **completely filled s and p** valence sublevels?

- A** halogens
- B** noble gases
- C** alkali metals
- D** alkaline earth metals

18
2
He
10
Ne
18
Ar
36
Kr
54
Xe
86
Rn

(b)

Which properties are most common in **nonmetals**?

- A** low ionization energy and low electronegativity
- B** low ionization energy and high electronegativity
- C** high ionization energy and low electronegativity
- D** high ionization energy and high electronegativity

(d)

Within **Period 2** of the Periodic Table, as the **atomic number increases**, the **atomic radius** generally

- A** decreases
- B** increases
- C** remains the same

Li	Be	B	C	N	O	F	Ne										
Na	Mg	Al	Si	P	S	Cl	Ar										
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Cu	Zn	Ga	Ge	As	Se	Br	Kr		
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	Ac	Rf	Sg	Bh	Hf	Hs	Mt	Uu	Uub	Uut	Uuq	Uur	Uus	Uu	Uu	Uu

(a)



PREVIEW

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D Kr

Ce	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	Ac	Rf	Db	Sg	Bh	Hf	Mt	Uu	Uub	Uut	Uuq	Uur	Uus	Uu	Uu	Uu

(d)

D N

31	32	33	34	35	36
Ga	Ge	As	Se	Br	Kr
49	50	51	52	53	54
In	Sn	Sb	Te	I	Xe
81	82	83	84	85	86
Tl	Pb	Bi	Po	At	Rn

(c)

Which characteristic describes most **nonmetals** in the **solid phase**?

- A** good conductors of electricity
- B** good conductors of heat
- C** malleable
- D** brittle

The element in **Group 14, Period 3** on the Periodic Table is classified as a

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

13	14	15	16	17	18
B	C	N	O	F	Ne
13	14	15	16	17	18
Al	Si	P	S	Cl	Ar
31	32	33	34	35	36
Ga	Ge	As	Se	Br	Kr
49	50	51	52	53	54
In	Sn	Sb	Te	I	Xe
81	82	83	84	85	86
Tl	Pb	Bi	Po	At	Rn