

Science 10 Review Quiz

1. What is the total number of neutrons in an atom of O-18?
A) 16 B) 18 C) 8 D) 10
2. An atom of any element must contain
A) an equal number of protons and neutrons
B) an equal number of protons and electrons
C) more electrons than neutrons
D) more electrons than protons
3. Which statement matches a subatomic particle with its charge?
A) A proton has no charge.
B) A proton has a negative charge.
C) A neutron has no charge.
D) A neutron has a negative charge.
4. Which statement compares the masses of two subatomic particles?
A) The mass of a proton is greater than the mass of a neutron.
B) The mass of an electron is greater than the mass of a proton.
C) The mass of an electron is greater than the mass of a neutron.
D) The mass of a proton is greater than the mass of an electron.
5. Which two particles have approximately the same mass?
A) proton and neutron B) neutron and positron
C) neutron and electron D) proton and electron
6. In an atom of argon-40, the number of protons
A) equals the number of electrons
B) is less than the number of electrons
C) is greater than the number of electrons
D) equals the number of neutrons
7. Which atom has a nucleus that contains 13 protons and 14 neutrons?
A) Mg B) Al C) N D) Be
8. What is the mass number of $^{19}_9\text{F}$?
A) 19 B) 9 C) 28 D) 10
9. Which electron configuration represents an atom of an element having a completed third principal energy level?
A) 2-8-10-2 B) 2-8-18-2
C) 2-8-2 D) 2-8-~~8~~-2
10. If an element, X , can form an oxide that has the formula $X_2\text{O}_3$, then element X would most likely be located on the Periodic Table in the same group as
A) In B) Cd C) Ba D) Na
11. Which list of elements contains a metal, a metalloid, a nonmetal, and a noble gas?
A) Na, Zn, As, Sb B) Be, Si, Cl, Kr
C) K, Fe, B, F D) C, N, Ne, Ar
12. The elements in the Periodic Table are arranged in order of increasing
A) neutron number B) atomic number
C) mass number D) atomic radius
13. Which Group 15 element exists as a diatomic molecule at STP?
A) nitrogen B) arsenic
C) bismuth D) phosphorus
14. More than two-thirds of the elements of the Periodic Table are classified as
A) metals B) metalloids
C) nonmetals D) noble gases
15. Which element is a member of the halogen family?
A) S B) I C) B D) K
16. Alkali metals, alkaline earth metals, and halogens are elements found respectively in Groups
A) 1, 2, and 14 B) 2, 13, and 17
C) 1, 2, and 18 D) 1, 2, and 17
17. Which of the following Group 15 elements has the greatest metallic character?
A) bismuth B) phosphorus
C) nitrogen D) antimony
18. Which element is malleable and ductile?
A) Au B) S C) Ge D) Si
19. Atoms of metallic elements tend to
A) lose electrons and form positive ions
B) gain electrons and form negative ions
C) gain electrons and form positive ions
D) lose electrons and form negative ions
20. At STP, which element is brittle and *not* a conductor of electricity?
A) S B) Ar C) Na D) K

21. Which element is a noble gas?
 A) chlorine B) manganese
 C) antimony D) krypton
22. Which element is a metalloid?
 A) Au B) Al C) As D) Ar
23. Two categories of compounds are
 A) covalent and metallic
 B) covalent and molecular
 C) ionic and molecular
 D) ionic and metallic
24. Which type of matter is composed of two or more elements that are chemically combined in a fixed proportion?
 A) heterogeneous mixture
 B) homogeneous mixture
 C) solution
 D) compound
25. The list below shows four samples: *A*, *B*, *C*, and *D*.
 (*A*) HCl(aq)
 (*B*) NaCl(aq)
 (*C*) HCl(g)
 (*D*) NaCl(s)
 Which samples are mixtures?
 A) *A* and *B* B) *A* and *C*
 C) *C* and *B* D) *C* and *D*
26. Which formula represents strontium phosphate?
 A) Sr₃(PO₄)₂ B) Sr₃PO₈
 C) Sr₂(PO₄)₃ D) SrPO₄
27. In which compound is the ratio of metal ions to nonmetal ions 1 to 2?
 A) calcium sulfide B) calcium bromide
 C) calcium phosphide D) calcium oxide
28. What is the chemical formula for sodium sulfate?
 A) Na₂SO₃ B) NaSO₃
 C) Na₂SO₄ D) NaSO₄
29. Which formula represents copper(I) oxide?
 A) Cu₂O₂ B) CuO₂
 C) Cu₂O D) CuO
30. The correct chemical formula for iron(II) sulfide is
 A) Fe₂S₃ B) FeSO₄
 C) FeS D) Fe₂(SO₄)₃

31. The correct formula for nickel (II) oxide is
 A) NiO B) Ni₃O₂
 C) Ni₂O D) NiO₂
32. What is the correct name of Fe₂O₃?
 A) iron (I) oxide B) iron (II) oxide
 C) iron (III) oxide D) iron (V) oxide
33. Which balanced equation represents a single-replacement reaction?
 A) Mg + 2AgNO₃ → Mg(NO₃)₂ + 2Ag
 B) 2Mg + O₂ → 2MgO
 C) MgCl₂ + 2AgNO₃ → 2AgCl + Mg(NO₃)₂
 D) MgCO₃ → MgO + CO₂
34. Given the balanced equation:
 AgNO₃(aq) + NaCl(aq) → NaNO₃(aq) + AgCl(s)
 This reaction is classified as
 A) double replacement B) decomposition
 C) single replacement D) synthesis
35. Which chemical equation is correctly balanced?
 A) H₂(g) + O₂(g) → H₂O(g)
 B) N₂(g) + H₂(g) → NH₃(g)
 C) 2KCl(s) → 2K(s) + Cl₂(g)
 D) 2NaCl(s) → Na(s) + Cl₂(g)
36. Given the unbalanced equation:
 ___Fe₂O₃ + ___CO → ___Fe + ___CO₂
 When the equation is correctly balanced using the *smallest* whole-number coefficients, what is the coefficient of CO?
 A) 1 B) 2 C) 3 D) 4
37. Given the unbalanced equation:
 ___Na + ___H₂O → ___H₂ + ___NaOH
 When the equation is correctly balanced using the smallest whole-number coefficients, the coefficient for H₂O is
 A) 1 B) 2 C) 3 D) 4
38. When the equation
 ___Al₂(SO₄)₃ + ___ZnCl₂ → ___AlCl₃ + ___ZnSO₄
 is correctly balanced using the smallest whole-number coefficients, the sum of the coefficients is
 A) 9 B) 8 C) 5 D) 4

39. What is the total number of atoms contained in a 1.00-mole sample of helium?
A) 1.00 atom B) 2.00 atoms
C) 1.20×10^{24} atoms D) 6.02×10^{23} atoms
40. The total number of molecules in 34.0 grams of NH_3 is equal to
A) $1.00 \times 6.02 \times 10^{23}$ B) 2.00×22.4
C) 1.00×22.4 D) $2.00 \times 6.02 \times 10^{23}$
41. The molar mass of $\text{Ba}(\text{OH})_2$ is
A) 308.6 g B) 155.3 g
C) 171.3 g D) 154.3 g
42. Which substance has the greatest molecular mass?
A) NO B) CF_4 C) H_2O_2 D) I_2
43. What is the gram formula mass of $\text{Ca}_3(\text{PO}_4)_2$?
A) 214 g B) 310. g
C) 196 g D) 245 g
44. In the compound Al_2O_3 , the ratio of aluminum to oxygen is
A) 2 moles of aluminum to 3 moles of oxygen
B) 2 grams of aluminum to 3 grams of oxygen
C) 3 moles of aluminum to 2 moles of oxygen
D) 3 grams of aluminum to 2 grams of oxygen
45. Which sample contains a mole of atoms?
A) 78 g K B) 42 g Kr
C) 24 g C D) 23 g Na
46. The total number of moles represented by 20 grams of CaCO_3 is
A) 1 B) 2 C) 0.1 D) 0.2
47. What is the total mass in grams of 0.75 mole of SO_2 ?
A) 16 g B) 24 g C) 32 g D) 48 g
48. What is the mass in grams of 2.0 moles of NO_2 ?
A) 46 B) 60. C) 92 D) 30.

1 D
2 B
3 C
4 D
5 A
6 A
7 B
8 A
9 D
10 A
11 B
12 B

13 A
14 A
15 B
16 D
17 A
18 A
19 A
20 A
21 D
22 C
23 C
24 D

25 A
26 A
27 B
28 C
29 C
30 C
31 A
32 C
33 A
34 A
35 C
36 C

37 B
38 A
39 D
40 D
41 C
42 D
43 B
44 A
45 D
46 D
47 D
48 C