

Select the best answer.

1)

A chemical formula includes the symbols of the elements in the compound and subscripts that indicate

- a) the number of moles in each element. b) how many atoms or ions of each type are combined in the simplest unit.
- c) the formula mass. d) the charges on the elements or ions.

2)

A chemical formula for a molecular compound represents the composition of

- a) a molecule. b) an atom.
- c) the ions that make up the compound. d) the crystal lattice.

3)

How many atoms of fluorine are present in a molecule of carbon tetrafluoride, CF_4 ?

- a) 1 b) 2
- c) 4 d) 5

4)

Changing a subscript in a correctly written chemical formula

- a) changes the number of moles represented by the formula. b) changes the charges on the other ions in the compound.
- c) changes the formula so that it no longer represents that compound. d) has no effect on the formula.

5)

The formula for carbon dioxide, CO_2 , can represent

- a) one molecule of carbon dioxide. b) 1 mol of carbon dioxide molecules.
- c) one molar mass of carbon dioxide. d) all of the above.

6)

Which formula does NOT represent a molecule?

- a) H_2O (water) b) NH_3 (ammonia)
c) CO_2 (carbon dioxide) d) NaCl (table salt)

7)

What is the formula for zinc fluoride?

- a) ZnF b) ZnF_2
c) Zn_2F d) Zn_2F_3

8)

What is the formula for the compound formed by calcium ions and chloride ions?

- a) CaCl b) Ca_2Cl
c) CaCl_3 d) CaCl_2

9)

What is the formula for the compound formed by lead(II) ions and chromate ions?

- a) PbCrO_4 b) Pb_2CrO_4
c) $\text{Pb}_2(\text{CrO}_4)_3$ d) $\text{Pb}(\text{CrO}_4)_2$

10)

What is the formula for aluminum sulfate?

- a) AlSO_4 b) Al_2SO_4
c) $\text{Al}_2(\text{SO}_4)_3$ d) $\text{Al}(\text{SO}_4)_3$

11)

What is the formula for tin(IV) chromate?

- a) $\text{Sn}(\text{CrO}_4)_4$ b) $\text{Sn}_2(\text{CrO}_4)_2$
c) $\text{Sn}_2(\text{CrO}_4)_4$ d) $\text{Sn}(\text{CrO}_4)_2$

12)

What is the formula for barium hydroxide?

- a) BaOH b) BaOH_2
c) $\text{Ba}(\text{OH})_2$ d) $\text{Ba}(\text{OH})$

13)

Name the compound $\text{Ni}(\text{ClO}_3)_2$.

- a) nickel chlorate
- b) nickel chloride
- c) nickel chlorite
- d) nickel peroxide

14)

Name the compound $\text{Zn}_3(\text{PO}_4)_2$.

- a) zinc potassium oxide
- b) trizinc polyoxide
- c) zinc phosphate
- d) zinc phosphite

15)

Name the compound $\text{Hg}_2(\text{NO}_3)_2$.

- a) mercury(II) nitrate
- b) dimercury dinitrate
- c) mercury(I) nitrate
- d) mercuric nitrate

16)

Name the compound KClO_3 .

- a) potassium chloride
- b) potassium trioxychlorite
- c) potassium chlorate
- d) hypochlorite

17)

Name the compound $\text{Fe}(\text{NO}_2)_2$.

- a) iron(II) nitrate
- b) iron(II) nitrite
- c) ferric nitrate
- d) ferrous nitride

18)

Name the compound CuCO_3 .

- a) copper(I) carbonate
- b) cupric trioxycarbide
- c) cuprous carbide
- d) copper(II) carbonate

19)

What is the name of $\text{Sn}_3(\text{PO}_4)_4$ under the Stock system of nomenclature?

- a) stannous phosphate
- b) tin(IV) phosphate
- c) tin(III) phosphate
- d) tin(II) phosphate

20)

What is the name of $\text{Cr}_2(\text{SO}_4)_3$ under the Stock system of nomenclature?

- a) chromium(II) sulfate
- b) chromic sulfate
- c) chromium(III) sulfate
- d) chromous sulfate

21)

What is the metallic ion in copper(II) chloride?

- a) Co^{2+}
- b) Cl_2^-
- c) Cu^{2+}
- d) Cl^-

22)

Using the Stock system, name the compound PbO .

- a) plumbous oxide
- b) lead oxide
- c) potassium oxide
- d) lead(II) oxide

23)

Name the compound CF_4 .

- a) calcium fluoride
- b) carbon fluoride
- c) carbon tetrafluoride
- d) monocarbon quadrafluoride

24)

Name the compound SiO_2 .

- a) silver oxide
- b) silicon oxide
- c) silicon dioxide
- d) monosilicon dioxide

25)

Name the compound N_2O_4 .

- a) sodium tetroxide
- b) dinitrogen tetroxide
- c) nitrous oxide
- d) binitrogen oxide

26)

Name the compound SO_3 .

- a) sulfur trioxide
- b) silver trioxide
- c) selenium trioxide
- d) sodium trioxide

27)

Name the compound N_2O_5 .

- a) dinickel pentoxide
- b) dinitrogen pentoxide
- c) neon oxide
- d) nitric oxide

28)

Which compound's name includes the Greek numerical prefixes *di-* and *tri-*?

- a) Fe_2O_3
- b) $\text{Ca}_3(\text{PO}_4)_2$
- c) N_2O_3
- d) Al_2S_3

29)

Name the compound N_2O_3 .

- a) dinitrogen oxide
- b) nitrogen trioxide
- c) nitric oxide
- d) dinitrogen trioxide

30)

What is the formula for nitrogen monoxide?

- a) N_2O
- b) NOO
- c) NO
- d) N_2O_2

31)

What is the formula for silicon dioxide?

- a) SO_2
- b) SiO_2
- c) Si_2O
- d) S_2O

32)

What is the formula for nitrogen trifluoride?

- a) NiF_3
- b) NF_3
- c) N_3F
- d) Ni_3F

33)

What is the formula for dinitrogen trioxide?

- a) Ni_2O_3 b) NO_3
c) N_2O_6 d) N_2O_3

34)

What is the formula for sulfur dichloride?

- a) NaCl_2 b) SCl_2
c) S_2Cl d) S_2Cl_2

35)

What is the formula for diphosphorous pentoxide?

- a) P_2PeO_5 b) PO_5
c) P_2O_4 d) P_2O_5

36)

What is the formula for carbon disulfide?

- a) CaS_2 b) CS_2
c) S_2C d) SC_2

37)

The oxidation number of fluorine is

- a) always 0. b) -1 in all compounds.
c) $+1$ in all compounds. d) equal to the positive charge of all the metal ions in a compound.

38)

What is the oxidation number of oxygen in most compounds?

- a) -8 b) -2
c) 0 d) $+1$

39)

What is the oxidation number of an uncombined element?

- a) -1
- b) 0
- c) +1
- d) 8

40)

In a compound, the algebraic sum of the oxidation numbers of all atoms equals

- a) 0.
- b) 1.
- c) 8.
- d) the charge on the compound.

41)

What is the oxidation number of hydrogen in compounds containing metals?

- a) -1
- b) 0
- c) +1
- d) It is equal to the charge on the metal ion.

42)

What is the oxidation number of oxygen in peroxides?

- a) -2
- b) -1
- c) 0
- d) +2

43)

In a polyatomic ion, the algebraic sum of the oxidation numbers of all atoms is equal to

- a) 0.
- b) the number of atoms in the ion.
- c) 10.
- d) the charge of the ion.

44)

What is the oxidation number of hydrogen in most compounds?

- a) -1
- b) 0
- c) +1
- d) It is equal to the algebraic sum of the oxidation numbers of the nonmetals.

45)

What is the oxidation number of oxygen in H_2O_2 ?

- a) -2 b) -1
c) $+2$ d) $+4$

46)

What is the oxidation number of carbon in Cl_4 ?

- a) -4 b) $+1$
c) $+4$ d) $+5$

47)

What is the oxidation number of hydrogen in KH ?

- a) -1 b) 0
c) $+1$ d) $+2$

48)

What is the oxidation number of hydrogen in H_2O ?

- a) 0 b) $+1$
c) $+2$ d) $+3$

49)

What is the oxidation number of magnesium in MgO ?

- a) -1 b) 0
c) $+1$ d) $+2$

50)

What is the oxidation number of sulfur in SO_2 ?

- a) 0 b) $+1$
c) $+2$ d) $+4$

51)

What is the oxidation number of sulfur in H_2SO_4 ?

- a) -2 b) 0
c) $+4$ d) $+6$

52)

What is the oxidation number of oxygen in CO_2 ?

- a) -4
- b) -2
- c) 0
- d) +4

53)

Name the compound N_2O_2 using the Stock system.

- a) dinitrogen monoxide
- b) nitrous oxide
- c) nitrogen(II) oxide
- d) nitrogen oxide(II)

54)

Name the compound SO_2 using the Stock system.

- a) sulfur(II) oxide
- b) sulfur(IV) oxide
- c) sulfur dioxide
- d) sulfuric oxide

55)

Name the compound CCl_4 using the Stock system.

- a) carbon(IV) chloride
- b) carbon tetrachloride
- c) carbon chloride
- d) carbon hypochlorite

56)

Name the compound H_2O using the Stock system.

- a) water
- b) hydrogen dioxide
- c) hydrogen(I) oxide
- d) hydrogen(II) oxide

57)

Name the compound CO_2 using the Stock system.

- a) carbon(IV) oxide
- b) carbon dioxide
- c) monocarbon dioxide
- d) carbon oxide

58)

Name the compound N_2O_5 using the Stock system.

- a) nitrogen(II) oxide
- b) nitrogen(V) oxide
- c) nitrogen(VII) oxide
- d) nitrogen pentoxide

59)

Name the compound SiO_2 using the Stock system.

- | | |
|--------------------|----------------------|
| a) silica | b) silicon oxide |
| c) silicon dioxide | d) silicon(IV) oxide |

60)

Name the compound PBr_5 using the Stock system.

- | | |
|--------------------------|----------------------------------|
| a) potassium hexabromide | b) phosphorus(V)
pentabromide |
| c) phosphorus(V) bromide | d) phosphoric acid |

- 1) b
- 2) a
- 3) c
- 4) c
- 5) d
- 6) d
- 7) b
- 8) d
- 9) a
- 10) c
- 11) d
- 12) c
- 13) a
- 14) c
- 15) c
- 16) c
- 17) b
- 18) d
- 19) b
- 20) c
- 21) c
- 22) d
- 23) c
- 24) c
- 25) b
- 26) a
- 27) b
- 28) c
- 29) d
- 30) c
- 31) b
- 32) b
- 33) d
- 34) b
- 35) d
- 36) b

- 37) b
- 38) b
- 39) b
- 40) a
- 41) a
- 42) b
- 43) d
- 44) c
- 45) b
- 46) c
- 47) a
- 48) b
- 49) d
- 50) d
- 51) d
- 52) b
- 53) c
- 54) b
- 55) a
- 56) c
- 57) a
- 58) b
- 59) d
- 60) c