ENTRANCE TESTS ON CHEMISTRY

Variant 1

1. Show symbol of the element Hydrogen (put the sign of √):

☐ O ☐ H ☐ N

2. Matter is this (put the sign of √):

☐ iron ☐ glassware ☐ glass

3. Fill a table, use such words: water, oxygen, salt, iron.

Elementary substance	**Composite substance**

4. Choose the chemical formula of oxides (put the sign of √):

☐ CuO ☐ H_2CO_3 ☐ H_2SO_4

☐ Fe_2O_3 ☐ CO_2 ☐ HNO_3

5. What means the chemical formula $5H_2$? Specify in this formula an index, coefficient.

6. What anymore is relative atomic weight of oxygen or relative molecular weight of oxygen?

7. The substances which enter into the reaction are named (put the sign of √):

☐ reagents (chemical agents) ☐ products of reaction

8. Place coefficients in equalizations of chemical reactions:

$$CuSO_4 + NaOH \rightarrow Cu(OH)_2 + Na_2SO_4$$

$$Mg + HCl \rightarrow MgCl_2 + H_2$$

9. Choose the chemical formula of the oxide of iron (II) (put the sign of √):

☐ Fe_2O_3 ☐ FeO ☐ Cu

10. The law of weight preservation was formulated by (put the sign of v):

☐ D.I. Mendeleyev ☐ I.P. Pavlov

☐ M.V. Lomonosov.

ENTRANCE TESTS ON CHEMISTRY

Variant 2

1. Show symbol of the element Iron (put the sign of √):

☐ Al ☐ Ca ☐ Fe

2. Most widespread element in nature (put the sign of √):

☐ Al ☐ O_2 ☐ Si

3. Fill a table, use such words: nitrogen, magnesium, hydrogen, sulphur, iron, aluminium.

Metals	**Non-metals (metalloids)**

4. What from these acids are two-basic-acids (put the sign of √):

☐ CuO ☐ H_2CO_3 ☐ H_2SO_4

☐ Fe_2O_3 ☐ CO_2 ☐ HNO_3

5. What means the chemical formula $6O_2$? Specify in this formula an index, coefficient.

6. In what substance the fraction of total mass of oxygen is anymore (put the sign of √): ☐ CuO ☐ Cu_2O

7. Valence of hydrogen is equal (put the sign of √):

☐ 1 ☐ 3

☐ 2 ☐ it have not the defined value

8. Place coefficients in equalizations of chemical reactions:

$Fe_2O_3 + CO_2 \rightarrow Fe_2(CO_3)_3$ $Zn + O_2 \rightarrow ZnO$

9. Choose the chemical formula of the chloride of iron (III) (put the sign of √):

☐ $FeCl_3$ ☐ Fe_2O_3 ☐ FeS

10. Common amount of atoms during the chemical reaction (put the sign of √):

☐ changes ☐ does not change

☐ in one reactions changes, and in other it is not

ENTRANCE TESTS ON CHEMISTRY

Variant 3

1. Choose the chemical formula of molecule of oxygen (put the sign of √):

☐ O ☐ O_2 ☐ 2O

2. The chemical properties of substances are (put the sign of √):

☐ hardness ☐ color ☐ combustibility

3. The loss of a deposit is the sign of the _____ phenomenon.

(Insert in a skipped word).

4. Choose the chemical formula of the acid? (put the sign of √):

☐ Cu ☐ NaOH

☐ HNO_3 ☐ NaCl

5. What means the chemical formula $4H_2O$? Specify in this formula an index, coefficient.

6. Relative atomic weight shows, how many times atom of this element anymore (heavier) (put the sign of √):

☐ 1/12 parts of molecule of water ☐ 1/12 parts of molecule of hydrogen

☐ 1/12 parts of molecule of carbon

7. Weight of one mole of hydrogen is equal (put the sign of √):

☐ 1 ☐ 2 ☐ 3

8. Place coefficients in equalizations of chemical reactions:

$$Fe(OH)_3 \rightarrow Fe_2O_3 + H_2O$$

$$Na + S \rightarrow Na_2S$$

9. Choose the chemical formula of the oxide of phosphorum (V) (put the sign of √): ☐ NO ☐ P_2O_5 ☐ Al_2O_3

10. The word "atom" designates (put the sign of √):

☐ little ☐ indivisible

☐ that, which enters in the complement of molecule.

ENTRANCE TESTS ON CHEMISTRY

Variant 4

1. Show symbol of the element Oxygen (put the sign of √):

☐ S ☐ O ☐ N

2. Most widespread element in nature (put the sign of √):

☐ O_2 ☐ Al ☐ Si

3. Fill a table, use such words: kalium, boron, oxygen, copper.

Metals	**Non-metals (metalloids)**

4. Choose the chemical formula of oxides (put the sign of √):

☐ CuO ☐ H_2CO_3 ☐ H_2SO_4

☐ Fe_2O_3 ☐ CO_2 ☐ HNO_3

5. What means the chemical formula $6N_2$? Specify in this formula an index, coefficient.

6. In what substance the fraction of total mass of oxygen is anymore (put the sign of √): ☐ K_2O ☐ K_2O_2 ☐ KO_2

7. Valence of oxygen is equal (put the sign of √):

☐ 1 ☐ 3

☐ 2 ☐ it have not the defined value

8. Place coefficients in equalizations of chemical reactions:

$$Na + H_2O \rightarrow NaOH + H_2$$

$$SiO_2 + NaOH \rightarrow Na_2SiO_3 + H_2O$$

9. Choose the chemical formula of the oxide of carbon (IV) (put the sign of √):

☐ $CuCl_2$ ☐ CO ☐ CO_2

10. Common amount of atoms during the chemical reaction (put the sign of √):

☐ changes ☐ does not change

ENTRANCE TESTS ON CHEMISTRY

Variant 5

1. Show symbol of the element Carbon (put the sign of √):

☐ B ☐ C ☐ S

2. The chemical properties of substances are (put the sign of √):

☐ color ☐ hardness ☐ combustibility

3. Fill a table, use such words: nitrogen, water, hydrogen, salt.

Elementary substance	**Composite substance**

4. What from these acids are two-basic-acids (put the sign of √):

☐ Al_2O_3 ☐ H_2SO_4 ☐ H_3PO_4

☐ Na_2O ☐ CO_2 ☐ HNO_3

5. What means the chemical formula $3Cl_2$? Specify in this formula an index, coefficient.

6. What anymore is relative atomic weight of hydrogen or relative molecular weight of hydrogen?

7. Valence of sodium is equal (put the sign of √):

☐ 1 ☐ 3

☐ 2 ☐ не имеет определенного значения

8. Place coefficients in equalizations of chemical reactions:

$$NaOH + H_2SO_4 \rightarrow Na_2SO_4 + H_2O$$

$$Zn + HCl \rightarrow ZnCl_2 + H_2$$

9. Choose the chemical formula of the oxide of aluminium (put the sign of √):

☐ $CuCl_2$ ☐ Al_2O_3 ☐ FeS

10. The law of weight preservation was formulated by (put the sign of v):

☐ D.I. Mendeleyev ☐ M.V. Lomonosov.

☐ I.P. Pavlov