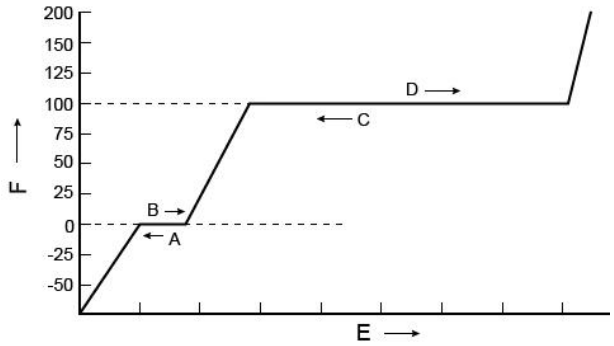
MULTIPLE CHOICE TEST WITH ONE CORRECT ANSWER
(Answer by circling just one of the answers marked with A, B, C or D)

1. Jovan breaks the school chalk into two pieces. The two pieces are then labeled Sample A and Sample B. Sample A is twice as large as Sample B. Which of the following statements is true?
A. Sample A is denser than Sample B.
B. Sample B is denser than Sample A.
C. Sample A and Sample B have the same density.
D. Sample A and Sample B are both less dense than the original chalk.

2. A small helium tank is capable of filling many balloons because
A. helium is a liquid.
B. baloons are solid.
C. particles in a helium tank are father apart than particles in a balloon.
D. the distance between the particles can change.

3. Which of the folllowing is found at **D** on the constructed plot for water at different temperatures (in °C)?



A. Sublimation.
B. Boiling.
C. Freezing.
D. Melting.

4. Select the formula below in which the two elements have the same valency.

A. NH_3
B. CaO
C. CaH_2
D. N_2O

5. Which statement about graphite is NOT true?
A. Graphite is an allotropic form of carbon.
B. It is nonmetal and a good electrical conductor.
C. It is nonmetal and a good electrical insulator.
D. It is nonmetal and a good conductor of heat.

6. Which of the following is a simple substance?
A. Diamond.
B. Glass.
C. Steel.
D. Cooking salt.

7. Which statement describes a chemical change or reaction?
A. When a tea bag is placed in a cup of boiling water, the color of the liquid changes.
B. The copper roof has changed the color to green over time.
C. The white blouse becomes partly red due to the blueberry juice poured over it.
D. The wheat on the picture is skillfully painted by mixing yellow and brown.

8. Maya dissolved a green substance using chemical methods. She received a yellow-green gas and a solid red-brown substance. Then she applied physical & chemical methods on the obtained substances and did not get new ones. What is the yellow-green substance?
A. Metal.
B. Indicator.
C. Elemental substance.
D. A mixture of gases.

9. Which set of substances listed is correctly sequenced from most to least acidic?
A. pH = 3, pH = 6, pH = 9
B. pH = 7, pH = 8, pH = 9
C. pH = 1, pH = 3, pH = 6
D. pH = 6, pH = 3, pH = 1

10. A mixture consists of sodium chloride, chalk and iron. Only sodium chloride is solvable in water. Distillation, use of magnet, addition of water and filtration are used for their separation. What is the possible sequence of procedures for separating sodium chloride, chalk and iron from the mixture?

A. Water addition, filtration, magnet application and distillation.
B. Water addition, magnet application, distillation and filtration.
C. Magnet application, water addition, distillation and filtration.
D. Water addition, magnet application, filtration and distilation.

11. What is the formula of copper(II) nitrate?

A. Cu_2NO_2
B. Cu_2NO_3
C. $Cu(NO_3)_2$
D. $CuNO_2$

12. What is missing in the following word equation:

calcium carbonate + acetic acid →
→ calcium acetate +_____ + _____

A. hydrogen and carbon dioxide.
B. hydrogen and carbon monoxide.
C. water and carbon monoxide.
D. water and carbon dioxide.

13. What does a reaction between sulphuric acid and sodium produce?

A. Sodium sulphite and water.
B. Sodium sulphate and water.
C. Sodium sulphate and hydrogen.
D. Sodium hydroxide and sulphur dioxide.

14. In the reaction of neutralization the reactants are:

A. salt and water.
B. acid and base.
C. metal and oxygen.
D. metal and acid.

15. In which of the following cases salt is obtained?

I. $Zn + H_2SO_4 \rightarrow$ II. $K + H_2O \rightarrow$
III. $CuCO_3 + H_2SO_4 \rightarrow$ IV. $C + O_2 \rightarrow$
V. $H_2SO_4 + KOH \rightarrow$

A. In all.
B. I and V.
C. IV and V.
D. I, III and V.

PROBLEMS

Answer in accordance with the requirements in the question.

1. On the figure there are two graduated cylinders filled with the same volume of liquid. The largest volume that can be measured with the smaller graduated cylinder is 50 mL.

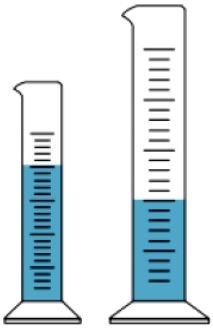
What is the volume of the liquid in the graduated cylinders? ___40____mL

What is the maximum volume that can be measured by the bigger graduated cylinder? _____100_____mL

Circle the correct answer.

Liquid of 22 mL can be measured by:

A. with the smaller graduated cylinder
B. with the bigger graduated cylinder
C. with neither of graduated cylinders
D. with both graduated cylinders



3 points (1+1+1)

2. Jana performed some chemistry class experiments.

I. Encircle YES if the statement is true or NO if it is false.

A chemical reaction occurs when a magnesium strip:

is put in a test tube, hydrochloric acid is poured on it and bubbles can be noticed.	YES	NO
is cut to small pieces.	YES	NO
is put into a flame and white powder is formed.	YES	NO

3 points (3 × 1)

II. Write the textual equations that describe chemical reactions which occur during experiments.

Magnesium + hydrochloric acid → magnesium chloride + hydrogen

Magnesium + oxigen → magnesium oxide

2 points (2 × 1)

III. Write these chemical equations using corresponding formulae.

$Mg + 2HCl \rightarrow MgCl_2 + H_2$

$2Mg + O_2 \rightarrow 2MgO$

3 points (2 × 1,5 for balanced
2 × 0,5 for no balanced equation)

3. Write the formulae or names of the following compounds.

iron(III) oxide	Fe_2O_3
sodium sulphite	Na_2SO_3
ZnO	zinc oxide
NH_4Cl	ammonium chloride

4 points (4 × 1)