INTEGRAL
10-point scale assessment of knowledge and students skills
General and Bioorganic Chemistry

Developed on the base of letter № 21-04-1/105 from Ministry of Education of Republic of Belarus of 22.12.2003.

1 point – lack of response or refusal to answer;

- The student recognizes the object of study, fragmentary paraphrases educational material with a low degree of understanding and a significant distortion of question nature. Distinguishes and recognizes only a few studied chemical formulas of substances, equations of chemical reactions on pictures, tables and in text.

2 points – student distinguishes between the definition of concepts, classes of substances and their structural formulas when they are presented ready form, but can't repeat self-studied material, even while using well-known algorithms.

3 points – student reproduces educational material without understanding of links between its constituent parts. Recognize classes of chemicals by their formulas, and has the simplest representation of chemical properties of substances. Able to reproduce studied material only with the help of leading questions. Don't know the general laws of chemical processes and can not use them when presenting the material.

4 points – student reproduces a large part of the educational material in fragments, without generalizations and conclusions. Makes a lot of allow correctable by additional questions mistakes. Able to predict the possible values of valences and oxidation states of atoms of chemical elements on the base of presented electronic formulas, but has difficulties to make them by himself. Has an idea about the basic laws of chemical reactions, but can't describe the mechanism without teacher's help.

5 points – student consistently reproduces most part of the studied material, often avoid non-essential errors (inaccurate statements, distortion in the structural formulas of substances without valences and oxidation degree disturbing, incomplete transfer of properties). Confirms conclusions by examples from educational material. Able to establish a simple relationships between the structure and basic properties of chemicals in terms of learning theories. While describing the mechanisms of chemical reactions, phenomena, and processes makes often mistakes, breaks the sequence and cause-effect relationship occurring processes.

6 points – student reproduces almost complete volume of theoretical material, gives examples, holds the logics of presentation, is able to mark the main idea. Has no difficulties while resulting electron-diffraction diagrams of chemical elements, the equations of chemical reactions that reflect the basic properties of substances. On the base of the structural formula is able to correctly specify initial distribution of electron density in the molecule, identifies its reactive centers and predicts posiible mechanism

of reactions involving this substance. Able to reproduce the structural formulas and reaction schemes for most compounds.

7 points – student knows educational material, including varying degrees of complexity, during the answer allows separated minor errors that can be fixed by him, even if they specified from outside. Uses specific studying and intellectual skills. To illustrate the answer freely uses pictures, formulas, diagrams, examples from the educational literature. In most cases, correctly describes the mechanisms of chemical reactions, allowing individual minor errors.

8 points – student operates by educational material in familiar and not familiar situation, is able to structure the learning material, gives examples from the main and supplementary sources. Use theoretical knowledge in explaining the features of the structure and properties of chemical compounds. Allows few minor errors during the presentation of one of the questions in a ticket.

9 points – student freely operates with educational material of varying degrees of complexity, is able to perform tasks on their own creative natureи & shows a high level of independency and competence. Possess all the necessary research techniques for chemical experiments. Shows great knowledge of theoretical, factual material & creatively uses it to explain the practical aspects of chemistry.

10 points –student is freely operating with educational material of varying degrees of complexity in main and additional literature, can link it with information from other courses and disciplines to solve problems in unusual situations. Material is presented in a systematic, vivid, convincing form, with the usage of a large number of drawings, diagrams, equations, reactions. Fluent in all the chemical concepts, easily establishes an analogy, interdisciplinary communications.

Assessment of students' knowledge on the basis of a written test.

Up to 10% of correct answers – 1 point;
11-20% of correct answers – 2 points;
21-30% of correct answers – 3 points;
31-40% of correct answers – 4 points;
41-50% of correct answers – 5 points;
51-60% of correct answers – 6 points;
61-70% of correct answers – 7 points;
71-80% of correct answers – 8 points;
81-90% of correct answers – 9 points;
91-100% of correct answers – 10 points.

The practical skills of students are not evaluated by points. Students in each faculty must fulfill a number of laboratory works and deliver them to the teacher. The

exam is prohibited, except those students who have completed and defended all the laboratory works. Otherwise, the offset is not exposed and student is not allowed to the session.

The final score on the exam is exposed on the basis of an oral interview. If test results are 3 or less points, then a good score on the exam is not exposed.

The rating scale was discussed and approved at General and Bioorganic Chemistry Department meeting, 31.08.2010

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