

**Ahmet Sultan –ht-19-4a Chemical technology faculti  
cand of chem. siences. Iztleuov G. M.,profs. Abduova A.,  
Askerbekova A., Amirkbekov E., Dosbaeva A. , Suleimenova I.**

*SKU M.Auezov, Shymkent, republic of Kazakhstan*

*Shymkent university, republic of Kazakhstan*

## **MATHEMATICAL LOGICAL CHARACTERISTICS IN ECOLOGY**

Connoisseurs of knowledge define a "concept" in figurative terms as a brick or a brick form of scientific thought. Some textbooks use the term "concept - an atom or atomic element of the logic of thought." In the discipline of formal logic, the definition of "concept" is introduced by the root word "sign" or "property". The difference between two things that are similar or different from each other is called the properties of those things. And the presence or absence of a quality or relationship in a thing is called a sign of that thing.

Example for Exercise: Let's compare a sheet of paper spread out for writing in front of us and a grain of charcoal that was brought to the stove. The characteristics of the paper include its white color, writing equipment, smooth surface, and the fact that it is a handwritten object made of wood. The characteristic features of coal are its dark color, its ability to burn, its heat, its natural origin, and so on. We can name the signs.

Thus, we see that everything in cognition has a full range of sacred features or distinctive features that are unique to it.

The sign of things in recognition is divided into two main classes: the sign of the meaning (or significant sign, the main sign) and the sign of insignificance (insignificant sign, auxiliary sign).

Definition: The properties of an object that are necessary in isolation to distinguish it from others, and are sufficient in general, are called the essential (significant) feature of the object.

Examples for training:

1. From the point of view of matter, the essential features of gold include: 1) "metallicity"; 2) "value"; 3) "all of a certain portion weight". And the "yellow color" and "bright sparkle" of gold are its insignificant properties. The saying of our people "Not all glitter is gold" is a testament to the absurdity of gold.

2. Let's analyze the concept of "square", which is often used in mathematics, in terms of this definition. Significance of this concept is "rectangular"; "All walls are equal" and "all angles are equal". Properties of square walls, such as their length and location, are some of its insignificant features.

Now "what is a concept?" Let's look at the definition, which is the exact answer to the question.

Definition: A concept is a form of thinking that reflects an object or phenomenon in the human mind in terms of its significance.

Individual concepts are denoted by capital letters of the Latin alphabet A, B, C, D, ... or, ..., ... Each concept is characterized by two logical aspects. Logical descriptors of the A-concept include its content () and volume  $(\cdot A_1 A_2 A_n M_A V_A)$

Definition: The set of meanings of an object represented by a concept is called the content of that concept. If we denote the concept by A, then its content can be denoted by  $M_A$

Definition: The scope of a concept () is a set (class) of things, each of which is characterized by the corresponding features of the content of this concept.  $V_A$

The content and scope of a concept are called by the logical descriptors of that concept.

Examples for training:

1. What are the logical characteristics of the concept of "person"?

Solution. Characteristics of a person: "mastery of the soul"; "Two-legged"; "Complete hairlessness of the body"; "Speaking"; "All minds"; "Association"; etc. Among them are the signs of significance: "the owner of the soul"; "All minds"; "Speaking". And "the fact that it has two legs"; "Complete hairlessness of the body"; The "community" is a sign of insignificance or insignificance. The content

of this concept = {consciousness, speech, possession}. And its size = {present people, past people, people born in the future}.  $M_A V_A$

*Historical legend.* Plato (427-347 BC), the teacher of the ancient Greek sage Aristotle, probably said in his youth: "Man is a two-legged, hairless animal." Then one of his brave and prudent disciples brought a chicken to Plato's classroom and threw it in front of the teacher, saying, "Here is your man." After such a careful and bold criticism of his disciple, Plato, in defining the concept, must have paid special attention to the correct distinction between the significant and insignificant features of something.[6,7].

2. What are the logical characteristics of the concept of "circle" considered in mathematics?

Solution. = {"Closed linearity in the plane", "the points of the line lie at a distance equal to a given segment from one point"}; = {"Current drawn circle", "previously drawn circle", "now drawn circle"}. The absurdity of the concept of "circle" can be called: "When was the circle drawn", "Where is the center", "The length of the radius", etc.  $M_{III} V_{III}$

#### *Types of concepts*

The subject of logic divides the concept into different types depending on the size and content. Depending on the scope of the concept: "unit concept"; There are 3 types, called "general concept" and "zero concept"[1].

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