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### Lecture 3. Concept of matter in philosophy.

#### PLAN:

1. Scientific-philosophical understanding of matter. The concept of substance.
2. Modern science about the structure of matter.
3. Motion is the form of existence of matter. Forms and types of movement
4. Space and time are forms of existence of matter.

**Concepts of matter and substance** - When we look at the world around us, various objects (mountain, forest, stars in the sky, etc.) come to life in front of our eyes. They have unique properties and relationships. In addition to this variety, objects in the world are also inseparably united. Thus, the existence acts as a complete whole. The **concept of matter** as a concrete form of existence occupies an important place in philosophy. **Matter is a philosophical category used to denote objective reality that is given to man through his senses, exists independently of our senses, and is reflected by our senses.** Philosophical character of matter is expressed in treating it as **substance and objective reality** . **Substance is a Latin word, which literally means "essence", "based on"**. Since ancient times, thinkers have felt that despite the infinite number of changes (development, destruction, fusion, disintegration, etc.) taking place in the world, there is also a certain stable, unchanging basis. They called it substance or primary matter. True, they imagined this basis in different ways. Some saw him in water, air and fire. According to others, the unchanging basis of the world is a combination of water, wood, earth and air. Although such views may seem naive at first, they have played a positive role in the explanation of nature and society. Treating matter as a substance is of particular importance in terms of solving the following three tasks: **a) explaining the unity of the world; b) showing many objects and processes in the world as different types of the same basis; v) proving that the diversity and richness of the forms of existence in the world was created by the natural-historical course of that common basis. Teachings that explain the unity of the world by coming from one substance are called monist (it means single, single) teaching** . However, it is possible to consider the substance both material and ideal. Accordingly , there is **materialistic monism and idealistic monism** . According to materialist monism, the world is one, indivisible. It is fundamentally material, and it is this materiality that constitutes the unity of the world. Spirit, consciousness, ideals do not have the nature of substance. Idealist monism considers matter to be a derivative of the ideal. This ideal has permanent existence, indestructibility, and is the first basis of all existence. In contrast to monism, the **dualist explanation of the world asserts that there are two substances (material, object and consciousness, spirit)** . If more than two beginnings are accepted as the

**basis of the world, this is called pluralism (in Latin pluralis means many)** . In the history of philosophy, the essence of substance has been explained in different ways. Some philosophers have imagined it as a **substrate (the common material basis of all phenomena)**, while others have imagined it as an essential property. In addition, there were those who treated substance as the basis of independent existence and change of objects. Finally, in some teachings, substance was even considered a logical subject.

In ancient philosophy, substance was defined as the material substrate, the primary basis of things (for example, the atomistic teaching of Democritus). In the philosophy of the new era, the analysis of substance went in two directions. Bacon, a representative of the first line, considered substance to be the basis that stands at the ultimate limit of existence. Another philosopher of that period, R. Descartes, spoke of the existence of a dual substance (material and spiritual). Thus, this direction was related to the ontological explanation of substance. Supporters of the second direction understood the substance in the epistemological (cognitive theory) plan. That is, they focused on the opportunities it creates for knowledge. For example, according to J. Berkeley, material substance is impossible. Every thing we perceive is a collection of our emotions. According to him, substance is a hook on which people hang their emotions. At the beginning of the 20th century, the concept of substance and its role in cognition were questioned in Western philosophy. For example, positivism considered it a remnant of ordinary consciousness. According to this teaching, substance also enters scientific knowledge as a residue.

**2. Modern science about the structure of matter - Matter is not homogeneous and has the same shape. It has an extremely complex structure. Within matter, there are different levels according to their quantity and quality. Everyone can probably do this in their daily life. Looking around, it becomes clear that material things in the world are not a mess. They act as a hierarchy of certain organized levels. In short, matter has a structural character.**

Modern science proves the complex systematic organization of matter. Each of its levels has specific carriers and rules of action. Now let's consider the main structural levels in the three main areas of matter (**inanimate nature, organic world and social life**). Modern science distinguishes the following levels of matter in inanimate nature: **submicroelemental, atomic, molecular, macrobodies, stars, Galaxy and Metagalactic**. The organic world includes **plants, animals and humans**. Social life – includes **society** .

**Evolution of views about matter and its properties** - In the history of philosophical thought, knowledge and ideas about matter have gone through a long path of development. In this process, the explanation of the matter according to the concrete sensory properties is gradually focused on the background. Its place **was taken by the characterization of matter as an abstract, general concept**. It is possible to define matter by showing its relationship with other concepts of the same level. Such a concept

is the concept of **consciousness** . It is clear from here that the **explanation of matter means to show its relationship with consciousness**. The 18th century French philosopher **A. Holbach made the first successful attempt in this** direction. He showed that matter is an objective reality that exists outside of human consciousness, up to consciousness, along with consciousness and independent of consciousness. In general, the concept of matter goes through several stages in its development. **At the first stage** , it appears in the form of visual sensations (the attempts of early Greek philosophers to search for the primordial basis of the world). **In the second stage**, matter was conceived as an object - Substrate (teaching of atomism and French materialists of the 18th century). **In the third stage**, philosophical epistemological ideas about matter are created (appearing since the beginning of the 20th century). **The fourth stage** involves the interpretation of matter from a substantial axiological point of view.

The materialist explanation of the concept of matter characterizes it as an objective reality that exists independently of consciousness. In addition, there are **subjective idealist and objective idealist doctrines about matter**. The first try to prove that there is no matter, everything is determined by human consciousness. Objective idealism considers matter to be the product of eternal ideas and supernatural consciousness.

Matter unites many objects and phenomena in the world according to a characteristic characteristic of all of them. This sign is to exist outside of and independent of consciousness. It is this property of objective reality that is the basis of the concept of matter. After that, among the main properties of matter, its **structurality, indestructibility, constant movement, space and time, and its ability to visualize have a special place**. One of the inseparable properties of matter is its indestructibility. This property is expressed in the fact that even though all concrete manifestations of matter change, it retains its stability as a whole. Modern science proves that at the most basic level, which is the basis of matter, there is a continuous transformation of elementary particles. But matter as a general substance always remains unchanged. The indestructibility of matter is also proved by the law of conservation and transformation of energy. According to this law, the total amount of mass and energy remains constant in all transformation processes occurring in the world. For example, mechanical motion is converted into thermal motion due to friction. Heat movement can be converted to radiation. In all these and other cases matter retains its eternity. No material object in the world is created from nothing as a concrete manifestation of matter, and when it is destroyed, it becomes something else. Similarly, the creation of each object means the destruction of another. The principle of indestructibility of matter is of great methodological importance. Many laws of science (conservation of mass and energy, electric charge, fluidity, etc.) were discovered on the basis of this principle.

**3. The concept of movement. Inseparability of matter and motion** - Everything in the world around us is in constant motion. For example, celestial bodies move along

their orbits. Movement of molecules occurs in various objects. Metabolism takes place continuously in living organisms. In addition, other physiological processes are also manifested in them. The heart, which at first seems to be motionless, does not stop for a moment, it pumps blood into the veins and moves. Many examples of action can be cited from social life. Thus, there are always certain changes in people's work, political life and culture. Even human thinking does not stand still. It means movement of thoughts. Therefore, there is no object in the world that is outside of motion. Therefore, the movement manifests itself in extremely diverse and colorful forms. The existences and situations that we perceive as stillness are actually in motion. For example, it seems to us that a person lying in bed at home is motionless. In fact, it rotates around the Earth's axis at great speed together with the house. Together with the Earth, it revolves around the Sun. It should be noted that the movement does not occur randomly or is not brought to the objects from outside. It has an objective character. That is, it is in the internal nature of objects. Because every material object exists due to the interaction of the elements that make it up. The concept of movement is commonly understood as the displacement of objects in space. In contrast, movement in philosophy is taken in a very broad sense. Its content includes **changes in all objects, from elementary particles to large celestial bodies** . Even the ancient philosophers saw the world in motion. The idea of "everything flows, everything changes" put forward by Heraclitus of Ephesus proves this. Democritus showed that atoms are constantly in motion. Aristotle believed that general action and its specific types are related to each other. He also imagined movement as a real entity and wrote: "by movement I understand the realization of what is in the form of possibility." In the philosophy of the new era, movement was treated as the most important property of matter. F. Bacon wrote: "There is no true rest in the bodies known to us, they only appear to be at rest." Since mechanics was developing rapidly during this period, the entire movement was considered to consist of mechanical movement. For example, Descartes considered matter and movement to be inseparable. But he imagined matter as an independent creative force. He reduced all movement to mechanical movement and showed that it is only the expression of the life of matter. The idea that matter is an active force from time immemorial is also a product of that period. Its founder, J. Toland, first overthrew the theory of mystical (magical) primal impulse. Thus, in the materialism of the 17th century, a point of view was born that explains movement as an inseparable property of matter. Eighteenth century French materialists (Lametrie, Diderot, Helvetius, Holbach) put forward such an idea for the first time; matter does not exist without motion. Motion is the mode of existence of matter. Hegel occupies a special place in the development of the doctrine of movement. He overcame the metaphysical and mechanical understanding of motion of his predecessors. Hegel also showed that the source of movement is contradiction. He discovered the basic laws of motion.

The movement is internally contradictory. It is an inseparable unity of variability and stability and tranquility. So, in the process of changing the properties and relationships of objects, on the one hand, certain moments are preserved, on the other hand, every stillness and stability is manifested through movement. In the endless flow of events in the world, the movement never stops. At the same time, each of them is in relative silence. Because regardless of how the object is changed, it keeps its existence and quality determination constant in a certain time interval. To say that any object is at rest means that it has a definite shape and fixed structure in space.

Motion is not created. He is also not annihilated. He can only transform from one form to another. Also, during this transformation, the laws of conservation of mass and energy are fully operational. Metaphysical materialism tries to separate matter from motion. He writes down the matter passively. It takes it beyond its inner source of motion. As a result, many of its adherents have to resort to the help of supernatural divine forces when explaining the world and nature.

**Types and Forms of Movement** - There are two main types of movement. The **first type of** movement represents the changes taking place within the subject itself. What does it mean? For example, a table, a chair, a room, and other simple things also mean a process from the point of view of philosophical analysis. Because there are constant changes in each of them. In this sense, objects are in continuous motion. However, this time does not exclude that they are in a certain relative stability. Therefore, the first type of movement does not affect the quality of objects; includes changes that do not destroy their nature and certainty. The **second type of** movement means such changes that lead to renewal of the quality of the subject, replacing it with a new one. This process manifests itself either as the destruction of the object in question (it loses its quality and thus acquires a new quality), or as its development and transformation into a more complex object. The second type of movement is closely related to the development process.

Movement also has different forms. The form of movement means the type of material objects that have the same type of activity laws and rules of organization. The issue of specific classification of movement forms also attracts attention. **In the 70s of the 19th century, F. Engels** showed the following five forms of movement of matter: **mechanical, physical, chemical, biological and social forms**. The form of mechanical movement is the spatial displacement of objects relative to each other. Physical motion is studied by physics, light phenomena, gravitational effects. Chemical reactions are chemical processes. Biological movement is organic life. Social movement is social processes and the history of society.

**4. Space and time** - All animate and inanimate objects in the world have space-time indicators. Space and time are forms that express the relationships of material objects. They are general and objective in nature. This means that nothing exists in the world outside of space and time. Space and time are the basic forms of all existence. They are

closely related to each other and to the movement of matter. Space means the space capacity of objects, their existence next to each other, the distance between them. Time means the sequence and speed of events, the pace of changes in them. Space is three dimensional. Thus, it is possible to determine the position of any object through three coordinates (width, length and height). Unlike space, time is one-dimensional and unidirectional. It moves from the past to the present and from the present to the future. Space and time are the unity of infinity and finitude. This means that space-time indicators in general are infinite. The infinite property of matter is also manifested in space and time, which are its forms of existence. On the other hand, the space-time dimensions of each concrete object are finite and limited. A very important property of time is its irreversibility. So, the events that happened in the past do not come back. They can only be restored and revived in thought, they cannot be returned. It should be noted that time is complex and difficult to understand. Aristotle once showed that time is the **most unknown of the unknown phenomena in nature that surrounds us**, because no one knows what time is and how to control it. Continuing this thought, Saint Augustine wrote: "As long as I am not asked about time, I think I know everything about it, but as soon as I am asked to talk about it, it turns out that I know nothing about it."

In the history of philosophical thought, the explanation of space and time has not been unambiguous. The many views expressed in this regard can be grouped into two types. The **first of them is the substantive approach, and the second is the relational approach**. The first point of view shows that space and time are substances that exist independently of matter. In ancient times, Democritus and Epicurus, and in modern times, I. Newton and the French materialists of the 18th century defended this position. The **relational explanation** of space and time takes them not independently, but in relation to matter (Aristotle, V. Leibniz and others). According to this view, space and time represent relationships between real objects. Therefore, it does not exist apart from them. That position is closer to the truth and is widespread in modern times.

**Space and time are the unity of continuity and discontinuity.** Phasicity belongs to the spatio-temporal indicators of events that we observe in our daily life. In the general sense, that is, when taken as forms of existence of matter, space and time are continuous. The continuity and discontinuity of space and time are like the relationship between their absoluteness and relativity. In general, these relationships express the essence of matter movement.