Николашин Игорь БВТ 2351 Домашняя работа

№172

The Academy of Sciences in St. Petersburg was founded by the decree of Peter the Great in 1724. This marks the day of the establishment of the Russian Academy of Sciences. The creation of the academy became a key element of Peter the Great's reforms. Industry and trade required scientific support. Peter the Great acquired the first collections for the Kunstkamera during his travels. In 1714, the Kunstkamera and the library were registered, serving as the first institutions of the academy. Peter the Great aimed for the cultural integration of Russia into Europe. The idea of creating the academy was discussed with Leibniz and other scholars. Negotiations began in 1721 on the direction of foreign scholars to Russia. The Senate discussed the establishment of the academy in January 1724. On January 28, 1724, a decree was issued announcing the creation of the academy. The institution was named the Imperial Academy of Sciences and Arts. Later, it became the Russian Academy of Sciences. In January 1724, Peter the Great requested the drafting of regulations for the academy. The decree approved the financing of the academy from customs duties. In 1724, a memorandum was sent to the Senate regarding the establishment of the academy. The Senate meeting on January 22, 1724, discussed the establishment of the academy of sciences. The decree on financing the academy was approved by the Governing Senate. The institution was named the Imperial Academy of Sciences and Arts. In 1747, it became known as the Imperial Academy of Sciences and Arts. Since 1991, it has been known as the Russian Academy of Sciences. Peter the Great acquired collections for the Kunstkamera during his travels. In 1714, the Kunstkamera and the library were registered. The idea of creating the academy was discussed with Leibniz and other scholars. Negotiations began in 1721 on the direction of foreign scholars to Russia. The decree on financing the academy was approved by the Governing Senate. In 1747, the institution was known as the Imperial Academy of Sciences and Arts. Since 1991, it has been known as the Russian Academy of Sciences. The Academy of Sciences in St. Petersburg was founded by the decree of Peter the Great. The establishment of the academy became a key element of Peter the Great's reforms.

№174

The Russian Academy of Sciences, the premier scientific institution in the Russian Federation, conducts research across various fields, with distinguished scientists as members. It encompasses sections like Physics, Mathematics, Chemistry, and more. The Academy comprises research institutes, laboratories, observatories, libraries, museums, and botanical gardens, among others. It actively engages in establishing international scientific institutions and organizing scientific events. Additionally, it fosters scientific relations abroad and trains scientific personnel. The Academy includes full, corresponding, and foreign members, elected according to established procedures. Its highest governing body, the General Meeting, defines main directions and addresses organizational matters. The Presidium executes decisions between meetings. Sections serve as scientific centers, guiding research activities. Research institutes, led by directors, are principal research bodies. The Academy's Archives preserve scientific manuscripts and engage in global publication exchanges.

Here is the translation of the detailed description of reforms in the Russian Academy of Sciences (RAS) after 1980:

* 1991 Reform: After the dissolution of the Soviet Union in 1991, the Russian Academy of Sciences (RAS) underwent significant changes. Its structure and functions were reorganized to align with the new political, economic, and social realities. This reform also affected the financing and management of the academy.
* Management Reforms: In 2013, changes were made to the management of the RAS aimed at improving organizational efficiency. This included optimizing the management structure, enhancing the system of control and accountability, and increasing transparency in decision-making.
* Financial Reforms: Steps were taken in the 2000s to improve the financing of the academy. This included increasing state investment in scientific research, establishing new financial mechanisms, and supporting scientific projects.
* Development of International Cooperation: After 1980, the RAS actively developed international cooperation with foreign scientific organizations and researchers. This included signing agreements on scientific collaboration, participating in international scientific programs, and exchanging experiences and knowledge.
* These reforms and changes were aimed at enhancing the efficiency and competitiveness of the RAS in the modern world, as well as adapting to new challenges and requirements of the scientific community.

№ 84

A decision **will not** be made until the next morning.

Her new book will probably **be translated** into a number of foreign languages.

The machine **was repaired** by someone.

The meeting **was postponed** because of illness.

The fire **was caused** by an electrical fault.

№85

The Sierra Club **is** an organization whose goals **center** on the protection of the environment. It **was found** in 1692 in San Francisco by naturalist John Muir, who **was** intent on preserving the natural beauty and harmony of the Sierra Nevadas in eastern California.

Today, the Sierra Club **boasts** almost 200,000 members in all fifty states of the United States. Through activities such as conferences, lectures, exhibits, expeditions, and films, the organization **works** to continue the effort begun by John Muir. The Sierra Club also **publishes** a weekly newsletter, a bimonthly magazine, and various books.

№86

As the current **flows** through the circuit, heat is **produced** in it.

At this very moment, the primary winding **is connected** to the source of energy.

During the experiment, glass **was rubbed** with silk to produce static electricity.

We didn't notice that our conversation **was being recorded**.

The capacity of these two conductors separated by an insulator **is being measured** now.

№92

В 1948 году в мире электроники была представлена революционная концепция: был изобретён транзистор, кристалл, который усиливал сигнал. С момента открытия вакуумной лампы в 1907 году в электронике ничего подобного не происходило. Через несколько лет кристаллические детекторы беспроводной эпохи были заменены радиолампами.

Теперь кристалл-усилитель, транзистор, конкурирует с вакуумной лампой, потому что транзисторы меньше, проще, эффективнее и долговечнее. В слуховых аппаратах трубки уже заменены транзисторами с невероятной экономией батареи. Более того, во многих транзисторных схемах компонентов меньше, чем в ламповых схемах, например, мультивибраторах. Например, в коммутационных схемах, таких как мультивибраторы, работу двух триодных ламп будет выполнять один точечный транзистор.

Транзистор — это устройство, управляемое током, а вакуумная лампа — устройство, управляемое напряжением. Транзистор разработан так, чтобы быть относительно низковольтным и низкоточным устройством. Электронные лампы вскоре будут заменены транзисторами в коммуникационном оборудовании, компьютерах, радиоприёмниках и телевизорах.

№93

A transistor is an active semiconductor device with three or more electrodes. By active, it is implied that the transistor is capable of current gain, voltage amplification, and power gain. A transistor is an electronic device in which electronic conduction occurs within a semiconductor.

A semiconductor is an electric conductor with resistivity in the range between metals and insulators, in which the electrical charge carrier concentration increases with increasing temperature over some temperature range.

The resistivities of semiconductors and insulators decrease rapidly with rising temperatures, while those of metals increase relatively slowly. Unlike metals and insulators, the resistivity of semiconductors depends on the direction of current flow. The direction of the easiest current flow or lowest resistivity is called the forward direction, and the direction of restricted current flow or highest resistivity is known as the reverse or back direction.

Транзистор - это активное полупроводниковое устройство с тремя или более электродами. Под активным подразумевается, что транзистор способен на усиление тока, усиление напряжения и усиление мощности. Транзистор - это электронное устройство, в котором электронная проводимость осуществляется внутри полупроводника.

Полупроводник - это электрический проводник с удельным сопротивлением в диапазоне между металлами и изоляторами, в котором концентрация носителей электрического заряда увеличивается с повышением температуры в некотором диапазоне температур.

Удельные сопротивления полупроводников и изоляторов быстро уменьшаются с повышением температуры, в то время как у металлов они увеличиваются относительно медленно. В отличие от металлов и изоляторов, удельное сопротивление полупроводников зависит от направления тока. Направление наиболее легкого тока или наименьшего сопротивления называется прямым направлением, а направление ограниченного тока или наивысшего сопротивления известно как обратное или обратное направление.

№98

The Minister **reminded** the audience that 20 years ago things were very different. He **said** the time had come to face realities and he **believed** we had to choose between cooperation or isolation. He **warned** that major problems would arise if we made the wrong choice.

№99

The administrative manager asked the communications engineer if he thought they should change the system. The communications engineer replied affirmatively, explaining that they had been experiencing numerous issues with the current setup. The administrative manager then inquired about the engineer's suggestion. The engineer explained that they were currently using a modem linked directly to their microcomputer and the telephone line, and they sent files to clients' computers using a software package called 'Communicate'.

The administrative manager expressed agreement, but asked about the problem. The engineer elaborated that the weak link was the line, causing data corruption during transmission to overseas clients. The administrative manager sought clarification on the issue. The engineer provided an example, stating that if they sent a 10-page contract to a client in France, faults on the line might result in parts of the contract being missing or incomprehensible to the recipient. The administrative manager acknowledged the severity of the situation.

The engineer further explained that the situation incurred significant costs in international call charges, especially considering the time taken to transmit documents. The administrative manager agreed and asked for the engineer's suggestion. The engineer proposed using an electronic mailbox service called DIALCOM, which would store files on a central computer for clients to access at their convenience.

The administrative manager inquired about the cost. The engineer replied that while it was cheaper, the key advantage was the use of a data network instead of traditional telephone lines, ensuring faster and more reliable transmission with less risk of data corruption. The administrative manager agreed to proceed with the proposal.