

## **Тема занятия: «Направления современного машиностроения»**

**Цель занятия:** выучить новый лексический материал по теме «Направления современного машиностроения»; совершенствовать навыки чтения и перевода текста профессионального направления; систематизировать знания, ответив на контрольные вопросы по теме занятия.

Уважаемые студенты! Ознакомьтесь с материалами практического занятия на тему «Направления современного машиностроения». Конспект занятия выполняйте в рабочей тетради письменно, обязательно указывая дату занятия, тему занятия, номер упражнения. Ответы предоставить преподавателю на проверку до 31. 05. 2023 г. в электронном виде (фотоотчёт) на e-mail [mikagol2605@mail.ru](mailto:mikagol2605@mail.ru). Телефон преподавателя для консультации и возникающих вопросов: +79591415816.

С уважением, Голодюк Марина Викторовна.

### **1. Прочитайте текст и определите:**

**а) о каких двух основных направлениях современного машиностроения упоминается в первом абзаце;**

**б) в каком абзаце перечисляют новые виды автоматизированных машин и механизмов;**

**в) в каких абзацах говорится о методах повышения срока службы и надёжности современных машин.**

**2. Выпишите из четвёртого абзаца текста словосочетания, обозначающие названия новых машин, механизмов, установок. Переведите предложения с данными словосочетаниями на русский язык.**

## **Trends in the modern machine-building industry**

The scientific and technological progress will continue in engineering along two main headlines. Firstly, it is automation, including the creation of "unmanned" industries. Secondly, raising the reliability and extending the service life of machines.

This certainly requires new technology. The machine modules on a large scale are well suited for "unmanned" industries.

Intense work is being carried out on new robots. What we need is not merely manipulators which can take up a workpiece and pass it on, but robots which can identify objects, their position in space, etc.

We also need machines that would trace the entire process of machining. Some have been designed and are manufactured. Modern engineering thinking has created new automated coal-digging complexes and machine systems, installations for the continuous casting of steel, machine-tools for electrophysical and electrochemical treatment of metals, unique welding equipment, automatic rotor transfer lines and machine-tool modules for flexible industries.

New technologies and equipment have been designed for most branches of engineering.

In the shortest time possible the engineers are to start producing new generations of machines and equipment which would allow manufacturers to increase productivity several times and to find a way for the application of advanced technologies.

Large reserves in extending service life for machines can be found in the process of designing. At present, advanced methods have been evolved for designing machines proceeding from a number of criteria. Automatic design systems allow for an optimizing of the solutions in design and technology when new machines are still in the blueprint stage.

A promising reserve in increasing the life of parts is strengthening treatment. In recent years new highly efficient methods have been found.

First and foremost of them is the vacuum plasma method for coating components with hard alloy compounds, such as nitrides and carbides of titanium, tungsten and boron. Methods have been designed for reinforcing machine parts most vulnerable to wear and tear, such as in grain harvesters, to make them last several times longer.

Thus, it is not merely quantity engineers and scientists are after, rather it is a matter of major characteristics. In other words, this is a matter of quality, and not of the mere number of new machines, apparatuses and materials.