**ЗАДАНИЕ №1**

***1. Прочтите и переведите текст на русский язык.***

**A VISIT TO A PLANT**

A group of pupils was going to visit a machine-building plant. They were met by the chief engineer. He told them a few words about the history of the plant and its work. After the introduction made by the chief engineer, the pupils were taken over the shops. They visited a forge, a foundry and the main assembly line. In the shops they watched the forging, casting and welding processes. The pupils were told about safety techniques, the aim of which is to prevent accidents. The air in the shops was purified by modern ventilators and dust-collecting apparatus.

Experimental work was conducted on a large scale; labor-saving devices were constantly being introduced.

The plant had several sanatoriums and rest homes where the workers could spend their holidays.

The pupils were much impressed by their visit to the plant and learned many interesting things about up-to-date equipment.

***2.*** ***Поставьте 5 вoпрoсов к тексту в устной форме.  Расскажите о своем посещении завода или фабрики.***

***3. Составьте рассказ о выборе профессии и своих планах на будущее, используя следующие слова и выражения:***

1) *after graduating from the college* - после окончания колледжа;

2*) I'd like to get work at*... - мне бы хотелось получить работу на (в) ...;

*3) I'm going to be*... - я собираюсь стать;

4) *I want to enter the institute*- я хочу поступить в институт;

5) *entrance exams* - вступительные экзамены;

6) *a full-time student*- студент дневного отделения;

7*) a half lime student* - студент вечернего отделения;

8) *a fitter (a bench worker)* - слесарь;

9) *a technician* - техник;

10) *a mechanic*- механик;

14*) a welder* – сварщик.

**ЗАДАНИЕ №2**

1. ***Переведите текст письменно***

**OUR WORK AT THE PLANT**

I study at the college. I have practice on my profession at a big plant. My work is interesting and important. I am fond of my work. The workers of the plant fulfill and over fulfill the plan.  The automation is introduced in many shops. The production is being constantly increased. My friends and I take part in social life of the plant.

I study and work three days a week. I'm learning many subjects. My favourite subjects are Physics and Literature. Besides, we have many special subjects. I study a trade of a turner and I operate a modern universal lathe. My foreman is an old worker. He is a skilled worker. He performs the most difficult operations.

After graduating from the vocational school I'm going to become a worker and study at the institute.

1. ***Найдите ответы на вопросы в тексте.***

* Where do you study?
* Where do you work?
* Is your work interesting and important?
* Do you take part in social life of the plant?
* What subjects do you learn at the vocational school?
* What trade do you study?
* is your foreman a skilled worker?
* What are your future plans?

1. ***Переведите следующие предложения на английский язык в письменной форме:***

1. Я изучаю профессию слесаря в колледже. 2. Мои друзья и я довольны своей работой. 3. Во всех цехах завода введена автоматизация. 4. Мастер нашей группы - квалифицированный рабочий. 5. После окончания колледжа я буду работать в машиностроительной промышленности. 6. Мы изучаем в колледже много специальных предметов.

4. Переведите устно на английский язык следующие словосочетания, употребив притяжательные место имения:

моя работа, наш цех, их завод, его друзья, ее мастер.

**ЗАДАНИЕ №3**

1. ***Запишите новые слова. Отработайте их чтение.***

*safety engineering* - техника безопасности

*accident*- несчастный случай

*safety rules* - правила техники

*lack*- нехватка, отсутствие безопасности

*training workshop* - учебный цех (мастерская)

*to ensure* – обеспечивать

1. ***Замените русское слово на английское. Используйте новые слова.***

This was *несчастный случай.*

All people should keep *технику безопасности.*

Do you know *правила техники*?

We work in *мастерской.*

I *обеспечиваю*safety engineering.

1. ***Прочтите текст.***

**SAFETY ENGINEERING**

Accidents to people in industrial enterprises are called industrial traumatism (injury). They occur when workers have not acquired the requisite for skill and lack the necessary experience in handling tools and equipment. Accidents are also caused through neglect of safety rules and regulations in the factories and training workshops.

The purpose of safety engineering is to prevent accidents and to create such conditions of work in industry which will ensure maximum productivity of labour.

When taking up new duties or when first going to work at any industrial enterprise each worker is obliged to acquaint him thoroughly with, and to master the safety instructions.

1. **Ответьте письменно на вопросы**

* How are the accidents to people in industrial enterprises called?
* When do the accidents to people occur?
* What must one do to prevent accidents?
* What is the purpose of safety engineering?
* What is a worker obliged to do when taking up new duties?

1. ***Составьте план пересказа текста***.
2. ***Перескажите текст по плану от первого лица.***
3. ***Составьте с новыми словами свои 6 предложений.***

**ЗАДАНИЕ №4**

***1. Найдите в правой колонке русские эквиваленты английских слов и словосочетаний:***

1. quantity    а. жесткий (жесткость)
2. alloy         b. углерод
3. carbon      с. растяжение
4. substance        d. поломка
5. tough(ness)      е. количество
6. hard(ness)        f. ковкость
7. ductility         g. разрыв
8. malleability     h. прочность
9. tension         i. вязкость
10. compression    j. сплав
11. rupture         k. твердый (твердость)
12. strength         l. сжатие
13. braking         m. вещество

***2. Переведите на русский язык встречающиеся в тексте интернациональные слова:***

metal, industry, industrial, absolutely, laboratory, steel, elastic, mechanical, result, atom, atomic, structure, special, temperature.

***3. Прочтите текст и выполните следующие за ним упражнения:***

**METALS**

1.        Mankind has used metals for centuries in gradually increasing quantities but only now they are employed in really great quantities.

2.        Today we know more than seventy metals, the majority of which are used in industry.

3.        Of all the metals iron is the most important one. Absolutely pure iron is never prepared except for laboratory purposes. The irons and steels in use today are really alloys of iron, carbon and other substances. They can be made elastic, tough, hard, or comparatively soft.

1. Mechanical properties of metals are the result of their atomic structure. They include hardness, ductility and malleability which are of special importance in engineering.
2. Ductility is the capacity of a metal to be permanently deformed in tension without breaking.

Malleability is the capacity of a metal to be permanently deformed by compression without rupture.

1. These properties are similar to each other but not the same. Most metals increase these properties at higher temperatures.
2. The strength of a metal is the property of resistance to external loads and stresses.
3. These mechanical properties are of great importance in industrial purposes because all parts and units made of iron and steel must meet up-to-date demands.

***4. Переведите на русский язык в письменной форме абзацы 3,4,5 и 7.***

1. ***Найдите соответствующие ответы на вопросы и напишите их в той***

***последовательности, в которой заданы вопросы:***

*Вопросы*

1. What is the most important metal?
2. What mechanical properties of metals do you know?
3. What is strength?
4. What is ductility?
5. What is malleability?

*Ответы*

a. The capacity of ametal to be permanently deformed in tension without breaking.

b. Iron.

c. The capacity of a metal to be deformed by compression without rupture.

d. The property of a metal to resist to external loads.

e. Hardness, ductility and malleability.

***6. Закончите предложения, выбрав соответствующий вариант окончания:***

*1.        The most important metal in use today is....*

a) carbon

b) iron

c) some other metal

1. *Ductility is the capacity….*
2. *Malleability is the capacity of a metal....*
3. *The strength of a metal is the property....*

a) to be permanently deformed in tension without breaking

b) to be permanently deformed by city of compression without rupture

c) to resist to external loads and stresses

**ЗАДАНИЕ №5**

***1. Найдите в правой колонке русские эквиваленты английских слов и словосочетаний:***

1. ferrous metals                 а. проводимость
2. cast iron                 b.углеродистая сталь
3. carbon content                с. износостойкость
4. alloy steel                 d прочность.
5. carbon steel         e. обрабатываемость (на станке)
6. strength                 f. жесткость.
7. hardness                 g. железо
8. ductility                 h. сплав
9. machinability                 i. черные металлы
10. resistance to wear           j.чугун
11. conductivity                 k. содержание углерода
12. iron                 1. ковкость
13. silicon                 m. легированная сталь
14. alloy                 n. кремний
15. rust-resistant                 о. нержавеющий

***2. Переведите на русский язык встречающиеся в тексте интернациональные слова:***

metal, element, industry, steel, material, industrial, electronic, magnetic, type, chemical, mechanical, rocket, automobile.

***3. Прочтите текст и переведите на русский язык в письменной форме абзацы 1,4,5,6.***

**FERROUS METALS AND STEELS**

1. Ferrous metals consist of iron combined with carbon, silicon and other elements. But carbon is the most important element in ferrous alloys.
2. Ferrous metals are used in industry in two forms: steel and cast iron, which differ in the quantity of carbon content.

3. Alloys consist of a simple metal combined with some other element. Steel is a ferrous material having some carbon content. There are two kinds of steel: carbon steel and alloy steels.

1. Carbon steel should contain only iron and carbon without any other alloying element.
2. Alloy steels are those in which in addition to carbon an alloying element is present. These alloying elements have an effect on the properties of steel. They increase its strength and hardness, for example, high percentage of chromium makes steel rust-resistant, and we call it "stainless steel".

6. Strength, ductility and machinability are the most important industrial and commercial properties of steel. Such properties as resistance to wear, electrical conductivity, and magnetic properties are important in special uses of metals.

7. According to their chemical and mechanical properties steels may be used in different branches of industry, for example, in machine building, rocket engineering, automobile industry, etc.

***4. Найдите соответствующие ответы на вопросы и напишите их в той последовательности, в которой заданы вопросы:***

*Вопросы*

1. What elements do ferrous metals consist of?
2. What is carbon steel?
3. What arc alloy steels?
4. What are the most important properties of steel?
5. In what branches of industry are steels used?

*Ответы*

1. Steels in which in addition to carbon an alloying element is present.
2. In machine building, automobile industry, etc.
3. Of iron combined with carbon, silicon and other elements.

d.        It contains only iron and carbon.

e.        Strength, ductility and machinability.

***5. Закончите предложения, выбрав соответствующий вариант окончания:***

*1.* Alloys consist of....

a) steel and cast iron

b) iron and stainless steel

c) simple metal and some other element

*2. Carbon steel contains....*

*3. Alloy steels include....*

a) steel and cast iron

b) iron, carbon, an alloying element

c) only iron and carbon

*4. The most important properties of steel are....*

a) electrical conductivity, resistance to wear, magnetic properties

b) strength, ductility, machinability

**ЗАДАНИЕ №6**

***1. Найдите в правой колонке русские эквиваленты английских слов и словосочетаний:***

1. lustre         а. окружающая среда
2. property         b. защищать от
3. quantity         с. подвергаться
4. conductivity         d плохой проводник
5. solid state         е. количество
6. brittle         f.блеск
7. undergo         g. сплав
8. to protect from      h. свойство
9. environment         i. проводимость
10. alloy         j твердое состояние
11. poor conductor     k. хрупкий
12. distinction         l. прочность
13. strength         m. жесткость
14. hardness         п. различие

***2. Переведите на русский язык встречающиеся в тексте интернациональные слова:***

metal, metallic, electricity, electric, fact, group, rocket, construction, element, material, corrosion, chemical, electromechanical, product, steel, organic, barrier, industry.

***3. Прочтите текст и выполните следующие за ним упражнения:***

**METALS AND NONMETALS**

1. There are some distinctions between metals and nonmetals. Metals are distinguished from nonmetals by their high conductivity for heat and electricity, by metallic lustre and by their resistance to electric current. Their use in industry is explained not only by those properties, but also by the fact that their properties, such as strength and hardness, can be greatly improved by alloying them with other metals.
2. There are several important groups of metals and alloys. The common metals such as iron, copper, zinc, etc. are produced in great quantities.
3. The so-called precious metals include silver, gold, platinum and palladium. The light metals are aluminum, beryllium and titanium. They are important in aircraft and rocket construction.
4. Many elements are classified as semimetals (bismuth, for example) because they have much poorer conductivity than common metals.
5. Nonmetals (carbon, silicon, sulphur) in the solid state are usually brittle materials without metallic lustre and are usually poor conductors of electricity. Nonmetals show greater variety of chemical properties than common metals do.
6. Metals can undergo corrosion, changing in this case their chemical and electromechanical properties. In order to protect metals from corrosion the products made of metals and steel are coated by some films (coatings). Organic coatings protect metals and steel from corrosion by forming a corrosion-resistant barrier between metal or steel and the corrosive environment.
7. Переведите на русский язык в письменной форме абзацы 1,2 и 5.
8. Найди те соответствующие ответы на вопросы, и напишите их в той последовательности, в которой заданы вопросы:

*Вопросы*

1. By what properties are metals distinguished from nonmetals?
2. What common metals are produced in great quantities?
3. What metals are called light?
4. What properties do nonmetals have?
5. What is done to protect metals from corrosion?

*Ответы*

a.        Iron, copper and zinc.

b.        They are usually poor conductors of heat and electricity

с.         They are coated by some organic coatings.

d.        High conductivity for heat and electricity.

e.        Aluminum, beryllium and titanium.

***6. Закончите предложения, выбрав соответствующий вариант окончания:***

*There are some different groups of metals, such as:*

1. Light metals:....                        a) iron, copper, zinc
2. Common metals:....                        b) silver, gold, platinum
3. Precious metals:...                c) aluminum, beryllium, titanium

*Nonmetals are ....*                        a) carbon, silicon, sulphur

b) aluminum, beryllium, titanium

**ЗАДАНИЕ №7**

***1. Найдите в правой колонке русские эквиваленты английских слов и словосочетаний:***

1. grinder         а. кронштейн
2. lever         b. заготовка
3. wheel         с. продольное направление

4.  cross-feed         d. налаживать станок *(для какой-л. работы)*

1. wheel spindle     е. регулировать
2. bracket         f. шлифовальный станок
3. wheel head         g. шлифовальный суппорт
4. to clamp         h. рычаг
5. to set-up         i. поперечная подача
6. to adjust         j. шлифовальная головка
7. longitudinal direction        k. шпиндель шлифовального круга
8. work piece         1. зажимать

***2. Переведите на русский язык встречающиеся в тексте интернациональные слова:***

universal, cylinder, type, mass, massive, construction, hydraulic, control, function, spindle, motor.

***3. Прочтите текст и выполните следующие за ним упражнения:***

**THE HYDRAULIC GRINDER**

1. This universal grinder is designed for grinding cylindrical holes and faces of work pieces. It is widely used for lot production in various types of machine building plants.
2. Machines of this type are of very massive construction, but they are designed in such a way that they can be operated as easily as machines of smaller sizes.
3. They are hydraulically operated and controlled by a single lever located at the front end of the machine. This single lever controls all functions of the machine including all movements of the wheel slide, cross-feed, starting and stopping the work of the spindle.
4. The wheel spindle is driven by a V-belt from a motor located on a bracket on the wheel slide. The cross-feed for the wheel slide is operated by a hydraulic unit.

5. The wheel head is clamped on the top surface of the table. When setting up the grinder, the wheel head can be adjusted in a longitudinal direction to suit the length of the work piece.

1. ***Переведите на русский язык в письменной форме абзацы 1,3 и 5.***
2. ***Найдите соответствующие ответы на вопросы и напишите их в той последовательности, в которой заданы вопросы:***

*Вопросы*

1. What operations are the universal grinder designed for?
2. What mechanism controls the movements of the wheel slide and cross-feed?
3. By what unit is the cross-feed for the wheel slide operated?
4. Where is the wheel head clamped?

*Ответы*

a.        By a hydraulic unit.

b.        For grinding cylindrical holes of work pieces.

с.        On the top surface of the table.

d.         The lever.

***6. Закончите предложения, выбрав соответствующий вариант окончания:***

*1.        The universal grinder* is...

a) a machine of small sizes

b) a machine of very massive construction

1. *All functions of the         machine are operated by....*
2. *A V-belt from a motor drives....*
3. *On the top of the surface table there is....*

a) the wheel spindle

b) the wheel head

c) the single lever

**ЗАДАНИЕ №8**

***1. Найдите в правой колонке русские эквиваленты английских слов и словосочетаний:***

1. mechanical engineer                        а. долгий срок службы
2. to deal (with)                         b. запустить в массовое производство

3.  designing cars                         с. подвергать испытаниям

4. to put into mass production             d. плавное сцепление

5. long service life                         е. отвечать современным требованиям

1. driving safety                         f. иметь дело *(с кем-л., чем-л.)*
2. to meet up-to-date demands   g. надежные тормоза и рулевое управление -
3. smooth-acting clutch                       h. безопасность езды (вождения)
4. silent gearbox                         i. бесшумная коробка передач
5. dependable brakes and steering

system                         j. инженер-механик

11.to subject to tests                         k. конструирование автомобилей

***2. Переведите на русский язык встречающиеся в тексте интернациональные слова:***

mechanical, mechanism, specialist, industry, phase, technology, process, laboratory, test, fact, automobile, engineer, method, principle, corrosion, type, material, comfortable.

***3. Прочтите текст и выполните следующие за ним упражнения:***

**AUTOMOBILE PRODUCTION**

1.        Specialists in automobile industry deal with designing and manufacturing cars, so they should know that the production of the automobile comprises the following phases:

1. Designing,
2. Working out the technology of manufacturing processes,
3. Laboratory tests,
4. Road tests.
5. Mass production (manufacturing).

2.        Why is it necessary to know all these facts?

It is important to know them as before the automobile (car or truck) is put into mass production, it should be properly designed and the automobile must meet up-to-date requirements.

3.        What are these requirements?

The automobile must have high efficiency, long service life, driving safety, ease of maintenance and pleasant appearance.

In order to obtain all these qualities engineers should develop up-to-date methods of designing cars, using new types of resistant to corrosion light materials. Also it is important to know computer science because it is intended to shorten the time between designing and manufacturing. Computers offer quick and optimal solutions of problems.

1. But before the car is put into mass production all its units and mechanisms are subjected to tests, first in the plant's laboratory, then the car undergoes a rigid quality control in road tests. Only then the car is put into mass production. Why are these tests required? What qualities are required of the automobile? The modern automobile must be rapid in acceleration, must have smooth acting clutch, silent gearbox, dependable brakes and steering system, as well as pleasant appearance. Also it must be comfortable and have all conveniences.

***4. Переведите на русский язык в письменной форме абзацы 3 и 4.***

***5. Найдите соответствующие ответы на вопросы и напишите их в той последовательности, в которой заданы вопросы:***

*Вопросы*

1. What phases does the production of the automobile comprise?
2. What requirements must the automobile meet?
3. Why are cars subjected to road tests?
4. What qualities are required of the automobile?
5. Why is it important for the specialists in automobile industry to know computing methods?

*Ответы*

a.        It must have high efficiency, long service life, driving safety, ease of maintenance and pleasant appearance.

b.        They should be able to develop up-to-date methods of designing cars and shorten the time between designing and manufacturing.

с Because they must meet up-to-date requirements.

d.        Designing, working out technological processes, laboratory and road tests, mass production.

e.        It must be rapid in acceleration, must have smooth acting clutch, silent gearbox, dependable brakes and steering system.

***6. Закончите предложения, выбрав соответствующий вариант окончания:***

*1. The cars are subjected to road tests in order....*

a) to shorten the time between designing and manufacturing

1. to meet up-to-date requirements
2. to work out new technological processes
3. *The car must have the following units....*

*3. The car must have the following qualities....*

a) high efficiency, long service life, driving        safety and pleasant appearance;

b) smooth acting clutch, silent gearbox dependable brakes and steering system.

**ЗАДАНИЕ №9**

***1. Найдите в правой колонке русские эквиваленты английских слов и словосочетаний:***

1. body                 а. тормоза срабатывают
2. car wheels                 b. силовая передача
3. power train                 с. главная передача
4. power plant                 d. коленчатый вал двигателя
5. springs                  е. нажимать на педаль
6. steering system               f. силовая установка
7. clutch           g. колеса автомобиля
8. final drive           h. рама с осями
9. engine crankshaft          i. топливная система
10. push down the pedal      j. рулевая система
11. brakes are applied          k. сцепление
12. frame with axles             1. вспомогательные устройства
13. fuel system           m. система смазки
14. lubricating system          n. кузов
15. accessories          о. рессоры

***2. Переведите на русский язык встречающиеся в тексте интернациональные слова:***

automobile, chassis, speedometer, electric, system, cylinder, cardan, control, hydraulic, pedal, accessories, differential.

***3. Прочтите текст и выполните следующие за ним упражнения:***

**COMPONENTS OF THE AUTOMOBILE**

1. Basically, the automobile consists of three parts: the power plant, or the engine, the chassis and the body. To these may be added the accessories: the heater, lights, radio, speedometer and other devices.
2. The power plant or engine is the source of power that makes the wheels rotate and the car move. It includes electric, fuel, cooling and lubricating systems. Most automobile engines have six or eight cylinders.
3. The chassis consists of a power train, frame with axles, wheels and springs. The chassis includes brakes and steering system.

4. The power train carries the power from the engine to the car wheels and contains the clutch, gearbox, propeller or cardan shaft, differential and the final drive.

5. The clutch is a friction device connecting (or disconnecting) the engine crankshaft to the gears in the gearbox. It is used for freeing the gearbox from the engine and is controlled by the clutch pedal.

6. Brakes are important mechanisms of the car. They are used to slow or stop the car. Most braking systems in use today are hydraulic. They are operated by the brake pedal. When the driver pushes down on the brake pedal, they are applied and the car stops.

1. ***Переведите на русский язык в письменной форме абзацы 1,3,5 и 6.***
2. ***Подберите соответствующие ответы на вопросы и напишите их в той последовательности, в которой заданы вопросы.***

*Вопросы*

1. What are the main basic parts of the automobile?
2. What does the chassis consist of?
3. What units does the power train contain?
4. What is the function of the clutch?
5. Why are brakes needed?

*Ответы*

a.        The clutch, gearbox, cardan shaft and the final drive.

b.        Freeing the engine from the gearbox.

с The power plant, the chassis and the body.

d.        A power train, frame with axles, wheels and springs.

e.        To slow or stop the car.

***6. Закончите предложения, выбрав соответствующий вариант окончания:***

1. *The mechanism used for stopping the car is....*
2. *The mechanism used for changing the speed is....*

a) clutch

b) gearbox

c) brakes

*3. The mechanism used for connecting (or disconnecting) the engine from the gearbox is ....*

a) brakes

b) clutch

c) steering system

*4. The unit carrying the power from the engine to the car wheels is....*

a) power plant

b) power train

c) chassis

*5. The instrument measuring the speed of the car is…*

a) heater

b) lights

с) speedometer

**ЗАДАНИЕ №10**

***1. Запишите новые слова и составьте с ними свои предложения.***

*shape*- форма

*casting* - отливка

*rolling* - прокат

*welding*- сварка

*piercing* - прохождение

*trimming*- обрезка (заделка отверстия краев)

*spinning*- выдавливание (на токарно-давильном станке)

*drawing* - черчение; *зд.*вытягивание

*chuck* - зажим; патрон, держатель

*carriage* - каретка

*milling -* фрезерование

*surface* - поверхность

*grinding* - дробление (измельчение), шлифовка

*convenient*- удобный

*to equip* - снаряжать, оборудовать

*shaping*- придание формы

*thread* - резьба; нарезка

*bending* – сгибание

*headstock* - передняя бабка

*tailstock*- задняя бабка

*lathe*- токарный станок

*drilling*– сверление

*cutting*– резание

*high-speed* – скоростной

*efficient*– эффективный

*forging*– ковка

*boring* - бурение, сверление

*steel*– сталь

1. ***Прочтите тексты***

**MACHINE-TOOLS**

Metal undergoes a number of processes before it is formed into the required shape: casting, rolling, welding, piercing, trimming, spinning, bending, drawing, etc.

The machines which perform all these kinds of works are called machine-tools. The most common machine-tool found in almost any workshop is the lathe. The main parts of it are: the headstock, the chuck, the tailstock, the carriage.

The automatic lathe is a perfection of the ordinary lathe. Its tools are changed automatically. A worker skilled in the use of a lathe is called a turner.

There are many other machine-tools that work on plane surfaces, for example, milling machines, planning and shaping machines. Circular holes are drilled by a drilling machine or bored by a boring machine or a boring mill. Thread milling machines are used in the production of different machine elements. Gear cutting machines include gear milling machines. All these machines use cutting tools made of high-speed steel.

**LATHES**

There are three types of lathes produced by our machine-tool manufacturing works: heavy, medium and light types. The type of a lathe depends upon the size of diameter of work pieces.

A most convenient and efficient machine is the model combination lathe for turning, milling, drilling, grinding, slotting, and tool-sharpening jobs. It can be used both in stationary and mobile repair shops, on ships, etc.

**DRILLING MACHINES**

The most drilling machines are equipped with mechanisms, permitting not only drilling, countersinking and reaming, but also cutting female threads with the help of taps. Both universal and special-purpose type radial "drills are built.

1. ***Ответьте письменно на вопросы***

* What processes does metal undergo before it is formed into the required shape?
* How are the machines which perform this work called?
* What is the most common machine-tool in any workshop?
* What are the main parts of a lathe?
* What is the automatic lathe?
* How do we call a worker, skilled in the use of a lathe?
* What machine-tools that works on plane surfaces, do you know?
* What do the drilling machines drill?
* Where are the threads milling machines used?
* What are the main types of lathes?
* What is the most convenient and efficient machine?
* What are the most drilling machines equipped with

**ЗАДАНИЕ №11**

***1. Найдите в правой колонке русские эквиваленты английских слов и словосочетаний:***

1. engine lathe         а. задняя бабка
2. turning         b. фартук (суппорта)
3. drilling         с. каретка
4. screw cutting       d. передняя бабка
5. headstock         е. сверление
6. tailstock         f. токарно-винторезный станок
7. saddle         g. нарезание винтов
8. lever         h. рычаг
9. apron         i. рукоятка
10. carriage         j. суппорт
11. guide ways        k. обточка
12. handle         1. направляющие (станка)

***2. Переведите на русский язык встречающиеся в тексте интернациональные слова:***

metal, operation, principal, spindle, function, centre, control, base, special, bolt.

***3. Прочтите текст и выполните следующие за ним упражнения:***

**ENGINE LATHE**

1. The engine lathe is the most commonly used machine-tool. It is used I for great variety о f meta1 operations, such as turning, drilling, screw cutting and many others.

2. The principal units of the lathe are the bed, the headstock, the tailstock and the carriage with the apron.

 3. The bed is the base of any machine-tool and it is made of grey iron casting on which the saddle and the tailstock slide along special guide ways. The headstock is also located and bolted on the bed.

4. The headstock contains the spindle and the speed gearbox. The spindle is the part of the machine to which power is applied to rotate the work. The changing of the spindle speed is effected by levers.

5. The tailstock consists of a casting fitted to the bed. The function of the tailstock is to support one end of the work turned between centers and to mount the tools.

6. The carriage of the lathe, which carries the tool, is made up of two principal parts: the saddle and the apron. The saddle travels along the guide ways of the bed. The apron represents the front wall of the carriage. On the front of the apron are mounted the handles and levers by which the actions of the tool are controlled.

***4. Переведите на русский язык в письменной форме абзацы 3, 4 и 5.***

***5. Найдите соответствующие ответы на вопросы и напишите их в той последовательности, в которой заданы вопросы:***

*Вопросы*

1. What operations are the engine lathe used for?
2. What are the principal units of the lathe?
3. What units are located on the bed?
4. What is the function of the tailstock?
5. Where are the handles and levers mounted?

*Ответы*

a.        To support one end of the work turned between centers.

b.        On the front of the apron.

с.         For turning, drilling, screw cutting and others.

d.        The headstock, the saddle and the tailstock.

e.        The bed, the headstock, the tai1stock and the carriage with the apron.

***6. Закончите предложения, выбрав соответствующий вариант окончания:***

1. *The unit that contains the spindle and the gearbox is called....*
2. *The unit that supports one end of the work turned between centers is called ...*
3. *The unit which carries the tool is called....*

a) the carriage

b) the headstock

c) the tailstock

1. *The units, by which the actions of the tool are controlled, are called....*

a) guide ways

b) the saddle and the apron

c) levers and handles

**ЗАДАНИЕ №12**

***1. Найдите в правой колонке русские эквиваленты английских слов и словосочетаний:***

1. internal combustion engine              а. поршень
2. combustion chamber                        b. верхняя мертвая точка
3. stroke           с. четырехтактный двигатель
4. piston                         d. коленчатый вал
5. top dead centre                         е. отверстие клапана
6. bottom dead centre                         f. двигатель внутреннего сгорания
7. four-stroke cycle engine                   g. нижняя мертвая точка
8. two-cycle engine                         h. топливная система
9. crankshaft                         i. такт впрыска *(топлива)*
10. intake stroke                         j. двухтактный двигатель
11. valve opening                         k. камера сгорания
12. fuel system                         1. ход, такт *(поршня)*
13. power stroke                         m. выхлоп
14. exhaust                         n. рабочий ход поршня

***2. Переведите на русский язык встречающиеся в тексте интернациональные слова:***

cylinder, automobile, limit, centre, cycle, compression, gas.

***3. Прочтите текст и выполните следующие за ним упражнения:***

**THE ENGINE**

1. The engine is the source of power that makes the car move. It is usually called an internal combustion engine because gasoline is burned within its cylinders or combustion chambers. Most automobile engines have six or eight cylinders.

The operating cycle of the four-stroke engine that takes place in the engine cylinder can be divided into four strokes. The upper limit of the piston movement is called the top dead centre. The lower limit of piston movement is called the bottom dead centre. A stroke is the piston movement from the top dead centre to the bottom dead centre or from bottom dead centre to the top dead centre. In other words, the piston the completes a stroke each time it changes the direction of its motion.

1. Where the entire cycle of events in the cylinder requires four strokes (two crankshaft revolutions), the engine is called a four-stroke cycle engine. The four strokes are: intake, compression, power and exhaust.
2. Two-cycle engines have also been made, and in such engines the entire cycle of events is completed in two strokes or one revolution of the crankshaft.
3. On the intake stroke the intake valve is opened. The mixture of air        and vaporized gasoline is delivered into the cylinder through the inlet valve. On the compression stroke the inlet valve is closed so that the mixture can be compressed. On the power stroke both valves (inlet and exhaust) are closed in order to raise pressure during the mixture combustion. On the exhaust stroke the exhaust valve is opened to exhaust the

residual gas.

1. ***Переведите на русский язык в письменной форме абзацы 2 и 5.***
2. ***Найдите соответствующие ответы на вопросы и напишите их в той последовательности, в которой заданы вопросы:***

*Вопросы*

1. What is the top dead centre?
2. What is the bottom dead centre?
3. When the engine is called a four-stroke cycle engine?
4. When the engine is called a two-cycle engine?
5. What kind of strokes can the events in the engine cylinder be divided into?

*Ответы*

a.        When the entire cycle of events is completed in two strokes.

b.        The lower limit of the piston movement.

с.        The upper limit of the piston movement.

d.        When the entire cycle of events in the cylinder is completed in four strokes.

e.        Intake, compression, power and exhaust strokes.

1. ***Закончите предложения, выбрав соответствующий вариант окончания:***
2. An internal combustion engine is called so because gasoline is burned....

a) inside the combustion chamber

b) outside the combustion chamber

1. *The upper limit of the piston movement is called...*

*3. The lower limit of the piston movement is called....*

a) the bottom dead centre

b) the top dead centre

*4. The four-cycle engine requires....*

a) two strokes of piston movement

b) four strokes of piston movement

*5. The mixture of air and gasoline is delivered into the cylinder....*

a) on the power stroke

b) on the exhaust stroke

c) on the intake stroke

d) on the compression stroke

**ТЕМАТИЧЕСКИЙ СЛОВАРЬ**

**A**

*adjust* - регулировать

*apron* - фартук (суппорта)

*acceleration*- разгон

*accessories*- вспомогательные устройства

*axle*– ось

**B**

*bed* - станина

*body* - кузов

*bottom dead centre -* нижняя мертвая точка

*bracket*- кронштейн

*brake pedal* - тормозная педаль

*brakes are applied* - тормоза срабатывают

**С**

*carriage*- суппорт

*car* - легковой автомобиль

*car wheels* - колеса автомобили

*casting -* отливка

*chassis -*шасси

*clamp* - зажимать

*clutch pedal* - педаль сцеплении

*column*- колонна

*combustion chamber* - камера сгорания

*complete*- завершать

*compression* - сжатие

*comprise*- включать (в себя)

*conveniences* - удобства

*cooling and lubricating systems*  -системы охлаждения и смазки

*control*- управлять

*crankshaft* - коленчатый мил

*cross-rail* - поперечина (траверса)

*cylinder* - цилиндр (двигателя)

**D**

*deal (with)* - иметь дело (с)

*dead stock* - передняя бабка

*deliver*- доставлять

*demand*- требовать

*demands*- требования

*dependable brakes* - надежные тормоза

*design* - проектирование

*designing* - проектирование

*develop*- разрабатывать, совершенствовать

*device* - устройство

*direction* - направление

*drilling* - сверление

*drive the motor* - приводить (в движение) мотор

*driving safety* - безопасность вождения(движения)

*disconnect* - отсоединять

**E**

*engine lathe* - токарно-винторезный станок

*each time* - каждый раз

*ease of maintenance* - легкость техобслуживания

*engine -* двигатель

*engine crankshaft* - коленчатый вал двигателя

*entire cycle* - полный цикл

*exhaust* - выпуск отработанных газов

*exhaust valve* - выпускной клапан

**F**

*face* - торец

*facing*- торцевое точение

*feed -* подача

*final drive* - главная передача

*finishing operation* - чистовая обточка

*four-stroke engine* - четырехтактный двигатель

*frame* - рама

*to free* - отсоединять

*friction device* - фрикционное устройство

*fue*l – топливо

*fuel system* - топливная система

**G**

*grey iron* - серый чугун

*grinder* - шлифовальный станок

*grinding*- шлифование

*guide ways* - направляющие

*gearbox*- коробка передач

*gears* - шестерни

**H**

*handle*- рукоятка

*hole*- отверстие

*hydraulic unit* - гидравлический агрегат

*heater -*отопитель

*high efficiency* - высокий к.п.д.

**I**

*in other words* - другими словами, иначе        говоря

*include*- включать (в себя)

*inlet valve* - впускной клапан

*intake stroke* - такт впрыска топлива

*intake valve* - впускной клапан

*intend* - предназначать

*internal combustion engine* - двигатель внутреннего сгорания

**L**

*length*- длина

*lever*- рычаг

*laboratory tests* - стендовые испытания

*lights*- фары

*long service life* - долгий срок службы

*longitudinal direction* - продольное направление

*lower limit* - нижний предел

**M**

*machine-tool* - станок

*manufacture*- производить

*manufacturing*- производство

*manufacturing  processes* - производственные процессы

*mass production (manufacturing*) - массовое производство

*mount*- устанавливать (монтировать)

*motion* - движение

*move* - двигаться

*multidisk friction clutch* - многодисковая фрикционная муфта

*mixture* - смесь

*mixture combustion* - горение смеси

**O**

*obtain* - получать, добиться

*offer*- предлагать

*optimal solutions* - оптимальные решения

**P**

*push down on the pedal* - нажимать на педаль

*piston movement* - движение поршня

*pleasant appearance* - приятный внешний

*power plant* - силовая установка

*power stroke* - рабочий ход

*power train* - силовая передача (трансмиссия)

*produce*- производить

*production* - производство, продукция

*propeller shaft -* карданный вал

*properly* - должным образом

*put into mass production* - запустить в массовое производство

**Q**

*quality (-ies)* - качество (-a)

**R**

*rapid* - быстрый

*require*- требовать

*rotate* - вращать(ся)

*roughing operation* - черновая обточка

*requirements* - требования

*residual gas* - остаточный газ

*resistant to corrosion* - коррозионно-устойчивый

*rigid quality control* - жесткий контроль

*raise pressure*- поднять давление

*road tests* - дорожные испытания

**S**

*saddle* - салазки

*screw cutting* - нарезание винтов

*set-up* - налаживать (станок)

*shorten* - сокращать

*side head* - боковой суппорт

*single lever* - единственный рычаг

*sizes* - размеры

*slide*- скользить

*silent gearbox* - бесшумная коробка передач

*smooth acting clutch* - плавное сцепление

*source of power* - источник питания

*speed*- скорость

*speed gearbox* - коробка переключения передач

*spindle* - шпиндель

*springs*- рессоры

*starting*- запуск

*steering system* - система рулевого управления

*stopping -* остановка

*subject to tests* - подвергать испытаниям

*suit*- соответствовать, подходить

*support*- поддерживать

*surface of the table-*поверхность paбочего стола

**T**

*tailstock* - задняя бабка

*technology* - технология

*test -* испытывать; испытание

*tool*- инструмент

*top dead centre*- верхняя мертвая точка

*travel -* передвигаться, перемещаться

*turning* - обточка

*turning mill* - токарный станок

*turret head* - револьверная головка

*truck -* грузовой автомобиль

**U**

*units and mechanisms* - агрегаты (узлы) и механизмы

*upper limit* - верхний предел

**V**

*vaporized gasoline* - парообразный бензин

*V-belt* - клинообразный приводной ремень

*vertical turning mill* - вертикальный токарный станок

**W**

*wheel head* - шлифовальный круг

*wheel slide*- шлифовальный суппорт

*wheel spindle* - шпиндель шлифовального        крута

*work (work piece)* - заготовка (деталь)

*work out -* разрабатывать

**ПРИЛОЖЕНИЯ**

**Измерительные инструменты**

33 - индикатор; 34 - глубиномер; 35 - микрометр; 36 - калиберная пробка; 37 - угломер; 38 - универсальный угломер; 39 - калиберная плитка; 40 -упорный угольник; 41 - предельная скоба; 42 - щуп; 43 - стальная метрическая линейка

***33 - indicator;  34 - depthometer; 35 - micrometer;  36 - plug gauge; 37 - protractor;   38 - universal level protractor; 39 - gauge block; 40 - thrust angle; 41 - limit snap gauge;***

***42 - feeler; 43 - steel meter rule***

1 - заклепка; 2 - закладная головка; 3 - стержень; 4 - замыкающая головка, обсадная головка; 5, 13, 17, 19, 22, 23, 25, 27, 29, 90 -винты; 5 - винт (болт) с шестигранной головкой; 6 - шплинт; 7 - гайка; 8 - прокладочное кольцо, шайба; 9 - резьба, винтовая нарезка; 10 - стержень; 11 - размер под ключ; 12 - головка; 13 - шестигранный болт с бортом; 14 - гайка с отверстиями, 15 - пружинное кольцо; 16 - борт, буртик; 17 - шпилька; 18 - корончатая гайка; 19 - винт с потайной головкой; 20 – контргайка; 21 - носик, выступ;  22 - шпилька; 23 - винт  с тавровой головкой; 24 - гайка-барашек, крыльчатая гайка; 25 - болт с круглой головкой; 26 - конический штифт; 27 - винт (болт) с четырехгранной головкой; 28 - штифт с насечкой; 29 - барашковый винт; 30 - анкерный, фундаментный болт; 31 - болт; 6, 15, 18, 20, 26, 28 - предохранители от отвинчивания, гаечные замки; 5, 13, 19, 23, 25, 27, 29, 30 - винты с головкой.

***1 - rivet; 2 - die head; 3 - pivot; 4 - closing head; 5, 13, 17, 19, 22, 23, 25, 27, 29, 30 -screws; 5 - hexagon head screw; 6 - split pin; 7 - nut; 8 - joint ring (washer); 9 - screw thread; 10 - pivot; 11 - gauge; 12 - head; 13 - hexagon bolt; 14 - drilled nut; 15 - spring ring; 16 - bead; 17 - stud (brad); 18 - castellated nut; 19 - sunk screw; 20 - locknut; 21 - lug; 22 - stud (brad); 23 - T-head screw; 24 - thumb nut; 25 - screw bolt; 26 - taper pin; 27 - square head screw (bolt); 28 - cut pin; 29 - winged screw; 30 - anchor bolt; 31 - bolt; 6, 15, 18, 20, 26, 28 - nut locks; 5,13, 19, 23, 25, 27, 29, 30 - head screws***