Вариант 1

The early days of the Automobile

1. One of the earliest attempts to propel a **vehicle** by **mechanical po**wer was suggested by Isaac Newton. But the first **self-propelled** vehicle **was constructed** by the French military engineer Cugnot in 1763. He built a **steam-driven engine** which had three **wheels,** carried two **passengers** and run at maximum **speed** of four miles. The supply of steam lasted only 15 minutes and the carriage had to stop every 100 yards to make more **steam.**

2. In 1825 a steam engine was built in Great Britain. The vehicle carried 18 passengers and covered 8 miles in 45 minutes. However, the progress of **motor cars** met with great opposition in Great Britain.

3. In Russia there were cities where motor cars were **outlawe**d altogether. When the editor of the local newspaper in the city of Uralsk bought a car, the governor **issued** these instructions to the police: «When the vehicle appears in the streets, it is to be stopped and **escorted** to the police station, where its driver is to be **prosecuted».**

4. From 1860 to 1900 was a period of the application of **gasoline engines** to motor cars in many countries. The first to perfect gasoline engine was N. Otto who **introduced the four-stroke cycle of operation**. By the time motor cars got a standard shape and **appearance.**

In 1896 a procession of motor cars took place from London to Brighton to show how **reliable** the new vehicles were.

The cars of that time were very small, **two-seated cars** with no roof, driven by an engine placed under the **seat.** Motorist had to carry large cans of **fuel** and separate **spare tyres**, for there were no **repair** or filling stations to serve them.

After World War 1 it became possible to achieve greater **reliability** of motor cars, **brakes** became more **efficient**. **Multi-cylinder engines** came into use; most commonly used are **four-cylinder engines**.

5. Gradually the development of vehicles driven by **international combustion engine** – cars, as they had come to be known, led to the **abolition** of earlier **restrictions.** Huge capital began to flow into the **automobile industry**.

From 1908 to 1924 the number of cars in the world rose from 200 thousand to 20 million; by 1960 it had reached 60 million!

6. There are about 3,000 Americans who like to **collect antique cars**. They have several clubs such as Antique Automobile Club. **Collectors** can also advertise in the magazine published by their clubs. The best collection-100 old cars of great rarity – is in possession of William Harrah. He is very **influential** in his field. The value of his collection is not only historical but also practical: photographs of his cars are used for films and **advertisements.**

1. Переведите на русский язык следующие слова и словосочетания:

Vehicle, mechanical power, self-propelled, was constructed, a steam-driven engine, wheels, passengers, motor cars, issued, prosecuted, of gasoline engines,

introduced the four-stroke cycle of operation, two-seated cars, efficient, international combustion engine, abolition, automobile industry, collect antique cars, advertisements.

2. Переведите письменно первые два абзаца

3. Закончите предложения, выбрав их из текста

1*) In ..... a steam engine was built in Great Britain.*

2) From 1860 to 1900 was a period of the application…

3) The cars of that time were very small…

4) Multi-cylinder engines came into use, most commonly used are…

5) The best collection-100 old cars of great rarity –…

Вариант 2

Different kind of land transport

What was the reaction of the people after the invention of the steam engine?

In Washington the story is told of the Patent Office who in the early thirties of the last century suggested that the Office be closed because «everything that could possibly be invented had **been invented».** People experienced a similar feeling after the **invention of the steam engine.**

But there was a great need for a more **efficient engine** than the **steam engine**, for one without **a huge boiler**, an engine that could quickly be started and stopped. This problem was solved by the invention of the **international combustion engine.**

Who introduced the first cheap motor car?

The first practical internal combustion engine was **introduced** in the form of a gas engine by the German engineer N. Otto in 1876.

Since then **motor transport** began to spread in Europe very **rapidly.** But the person who was the first to make it really popular was Henry Ford, an American **manufacturer** who introduced the first **cheap motor car**, the famous Ford Model «T».

When did diesel-engine Lorries become general?

The rapid development of the internal combustion engine led to its use in the farm **tractors,** thereby creating a revolution in agriculture. The use of motor vehicles for carrying heavy loads developed more slowly until the 1930s when **diesel-engined Lorries** became general.

The motor cycle steadily increased in popularity as engines and tyres became **more reliable** and roads improved. **Motor cycles** were found well suited for **competition races** and sporting events and were also recognized as the cheapest form of fast transport.

When were the trams introduced first?

Buses were started in Paris in 1820. In 1828 they were introduced in London by George Shillibeer, a coach builder who used the French name Omnibus which was **obtained** from the Latin word meaning «for all». His **omnibuses** were

driven by three horses and had seats for 22 passengers. Then in then 20th century reliable **petrol engines** became **available,** and by 1912 the new motor buses were fast replacing **horse-driven buses.**

Trams were introduced in the middle of the 19th century. The idea was that, as the rails were **smoother** than the roads, less **effort** was needed **to pull** a tram than a bus. The first **trams** were horse-drawn but the later trams were almost all driven by electricity. The **electric motor** driving the tram was usually with electric **current from overhead wires**. Such wires are also used **by trolleybuses**, which run on **rubber tyres** and do not need **rails.**

What do the longest oil pipe-lines connect?

The pipe-lines, which were in use by the ancient Romans for carrying water supplies to their houses, are now mainly used to **transport petroleum**. The first **pipe-line** of this kind was laid in Pennsylvania, the United States, in 1865.

Some of the longest oil pipe-lines **connect oil-fields** in Iraq and near the Persian Gulf with ports on the Mediterranean coast. A famous Pipe-line Under the Ocean was laid across the English Channel in 1944.

What are the cableways used for?

A form of transport which is quite common in some mountainous parts of the world, especially in Switzerland, is the aerial **cableway.** Cableways are used at nearly all winter sport centers to pull or carry **skiers** to the top **of the slopes**. Cableways are used by many Alpine villages which lie high up the mountain-sides for bringing up their supplies from the valley bellow.

Задания:

1. Распределите правильно слова, в соответствии с развитием транспорта

Omnibus, cableway, steam engines, pipe-lines, motor cars, diesel engines

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

Invention of the steam engines	*усилие*
efficient engine	*дизельный двигатель*
internal combustion engine.	*омнибус*

motor transport	*изобретение парового двигателя*
The rapid development	*бензин для транспорта*
diesel-engine	*троллейбусы*
Trams	*продуктивный двигатель*
Omnibuses	*связь с нефтяной сферой*
horse-driven buses.	*двигатель внутреннего сгорания*
Effort	*моторный транспорт*
The electric motor	*трамваи*
trolleybuses,	*лошадиная сила*
pipe-lines	*электрический мотто*
transport petroleum.	*трубопровод*
connect oil-fields	*бензин*

3. **Закончите предложения, выбрав их из текста**

1. People experienced a similar feeling after the….

2. The first practical internal combustion engine was introduced in the form of a gas engine by…

3. The use of motor vehicles for carrying heavy loads developed more slowly until…

4. The first trams were horse-drawn but the later trams were…

5. The first pipe-line of this kind was laid…

6. A form of transport which is quite common in some mountainous parts of the world, especially in Switzerland, is…

Вариант 3

Automobile production

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

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.**

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.

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.**

Задания:

а) Найдите в правой колонке русские эквиваленты английских слов и словосочетаний:

1. *mechanical engineer*	*а) долгий срок службы*
2. to deal (with)	*б) запустить в массовое производство*
3. designing cars	*в) подвергать испытаниям*
4. to put into mass production	*г) плавное сцепление*
5. long service life	*д) отвечать современным требованиям*
6. driving safety	*е) иметь дело*
7. to meet up-to-date demands	*ж) надёжные тормоза и рул. упр-я*
8. smooth-acting clutch	*и) безопасность езды*
9. silent gearbox	*й) бесшумная коробка передач*
10 .dependable brakes and steering system	*к) инженер-механик*
11. to subject to test	*л) конструирование автомобилей*

2. Ответьте на вопросы по тексту

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?*

3. 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

b) to meet up-to-date requirements

c) to work out new technological processes

2. **The car must have the following units….**

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

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

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

Вариант 4

Components of Automobile

Basically, the automobile consist of three parts: **the power plants, or the engine, the chassis and body.** To these may be added **the accessories**: the **heater, lighter, radio, speedometer** and other devices. 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**.

The chassis consists of a **power train, frame with axles, wheels and springs.** The **chassis** includes **brakes and steering system**.

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.** 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**. Brakes are important mechanisms of the car. They are used to slow or to 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.

Задания:

1. **Переведите на русский язык встречающие в тексте интернациональные слова:**

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

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?*

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

1. The mechanism used for stopping the car is…

a) clutch

b) gearbox

c) brakes

2. The mechanism used for changing the speed is…

a) clutch

b) gearbox

c) brakes

3. The mechanism used for connecting 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

c) speedometer

Вариант 5

Internal-combustion Engines

Internal-Combustion engines are very important components of Automobile. It have the following a**dvantages**: small specific **weight** (**weight-to-power ratio**), quick start, a relatively high **fuel economy** (high **efficiency)**, small quantity of water required (only for cooling), and even this not in all engines, speeds**, adjustment** over a certain **range.**

On the other hand, international-combustion engines cannot be reversed directly or **endure high overloads**, and as a result when selecting an engine the required power should be **determined** from **the highest load** duty; they also cannot be started under load, which calls for the use of **clutches.** An international-Combustion engine should be provided with a **gear box** (**transmission**) to change **the torque,** since the torque developed by the engine at various **crankshaft** speeds changes **insignificantly.**

Internal-Combustion engines utilize for their operation **the thermodynamic processes** which occur in **the clutches** during **fuel combustion**.

In ***carburetor* engines** the combustible mixture is prepared outside the engine cylinders in a carburetor and is then delivered by the cylinders. The mixture is **ignited** by an electric spark generated by a special **source of current**.

In ***diesel* engines** the combustible mixture is formed inside the cylinders as the fuel is being injected through a **nozzle.** The fuel is **injected** at the moment when the cylinder **contains** strongly compressed and therefore **heated air**, which causes the mixture to **self-ignite**. For this reason diesel engines are frequently called **compression ignition engines**.

A ***gas turbine*** is a rotary engine which transforms the **kinetic energy** of gas produced by fuel burned in a combustion chamber into mechanical work. Gas turbine units consist of a compressor, **fuel pump**, combustion chamber with nozzle, and a gas turbine. So far the high temperature of the gas has **prevented** gas turbines from being used widely on automotive vehicle.

Задания:

1. Переведите на русский язык следующие слова и словосочетания

Internal-Combustion engines, advantages, weight-to-power ratio, fuel economy, adjustment, endure high overloads, the highest load, clutches, gear box

(transmission), the torque, the thermodynamic processes, carburetor and diesel types, combustible mixture, source of current, injected, compression ignition engines, gas turbine, fuel pump.

2. **Закончите предложения, выбрав соответствующий вариант окончания**

1. ***Combustion engine should be provided with***

a) clutch

b) gearbox

c) springs

2. ***Internal-Combustion engines utilize for their operation…***

a) the thermodynamic processes

b) with steering system

3. ***In carburetor engines the combustible mixture is prepared*** *...*

a) outside the engine cylinders

b) inside the engine cylinders

4. A gas turbine is a rotary engine which transforms…

a. mechanical work.

b. kinetic energy

***3.* Ответьте на вопросы по тексту**

1. *What are the advantages have the Internal-Combustion engines?*

2. What energy does engine transform in gas turbine?

3. What is the Internal - Combustion engine?

Вариант 6

Diesel Engine

If you know something about ordinary **gasoline engines**, such as those in automobiles, you know have noticed that diesel engines in many respects, work in the same way.

Both types of engines **are internal combustion engines**, that is, they burn the fuel inside their **cylinders** Most gasoline engines and many **diesel engines** work on the **four-stroke cycle**, that is, the **piston** makes **a suction stroke**, a **compression stroke**, a **power stroke** and an **exhaust stroke**.

What are the main differences between diesel engines and **gasoline engines**?

1. A diesel engine has no ignition system- It has no **spark plug fed** with high-tension electricity from a **distributor, spark-coil, timer, and battery.**

2. A diesel engine draws into its cylinder air alone, and it compresses this air on its **compressions stroke** before any fuel enters the cylinder

3. Diesel engines use greater compression than gasoline engines. The compression in a diesel engine is not limited by the possibility **of pre-ignition** because a diesel engine compresses air only. Therefore, diesel engines use compression ratios of about 16 to 1, and so achieve greater **efficiency** in the use of fuel.

Why are diesel engines used so much? Not **merely** because they can produce **power** - there are many other ways of producing power.

Advantages of Diesel Engines.

1. Small **Consumption** of Fuel
2. Cheap fuel
3. Economy at Light Loads
4. **Greater Safety**
5. Economy in small Sizes
6. Independence **of Water Supply**
7. Quick Starting

Задания:

1. Переведите слова и словосочетания на русский язык:

gasoline engines, internal combustion engines, diesel engines, four-stroke cycle, the piston, suction stroke, a compression stroke, a power stroke and an exhaust stroke, spark plug fed, distributor, spark-coil, timer, and battery, pre-ignition, water supply

2. Заполните таблицу

«The main differences between diesel engines and gasoline engines»

DIESEL ENGINE	**GASOLINE ENGINE**
1.	**1.**
2.	**2.**
3.	**3.**

3. Закончите предложения, выбрав их из текста:

1. *Most gasoline engines and many diesel engines work on the…*
2. *A diesel engine draws into its cylinder air alone, and it compresses this air on its…*
3. *Diesel engines use …… than gasoline engines*
4. *Therefore, diesel engines use compression ratios of about…*

Вариант 7

Four-Stroke Engine and Two-Stroke Engine

(DISEGN OF INTERNAL-COMBUSTION ENGINES)

The majority of present-day **internal-combustion engines** operate on the **four-cycle principle.** According to the processes occurring in the **cylinder**, each of the four strokes is named as follows:

1 stroke – admission

2 stroke – compression

3 stroke – power stroke

4 strokes- - exhaust

Admission Stroke. The **intake valve** is open, the **piston** moves from **TDC to BDC.** A **rarefaction** is built up in the cylinder end above the piston which in different engines. In view of the difference in **pressure in the cylinder** and **carburetor,** the **combustion mixture** flows from the carburetor into the cylinder.

Compression Stroke. At the end of the **admission stroke both valves** are shut off. As the **crankshaft** continues to rotate it drives the piston from BDC to TDC. The temperature of the mixture at the end of the compression stroke reaches about 300c.

Power Stroke. At the end of the upward stroke of the piston the compressed mixture **is ignited by an electric spark.** Both valves are closed

Exhaust Stroke. The exhaust valve is open, the piston moves from BDC to TDC and ejects the **used gases** from the cylinder. At the end of the exhaust stroke, the temperature of the gases drops to 700-800c.

In **a two – stroke engine** all the **four processes comprising the working**

cycle are completed during two stroke of the piston, during one revolution of the crankshaft. This offers the following advantages:

1 with the **same basic dimensions**, **a two – stroke engine** should develop theoretically **twice the power** of a four – stroke engine

2 the engine **operates** more **smoothly** since the power strokes **occur twice as frequently.**

Задания:

1. Переведите слова и словосочетания на русский язык:

internal-combustion engines, four-cycle principle, cylinder, admission Stroke, intake valve, pressure in the cylinder, combustion mixture, Compression Stroke, Power Stroke, Exhaust Stroke, a two – stroke engine, smoothly.

а) Распределите правильно и переведите:

1 stroke – power stroke

2 stroke – admission

3 stroke- - exhaust

4 stroke – compression

3. **Закончите предложения, выбрав их из текста**

1) The majority of present-day internal-combustion engines operate on the…

2) The intake valve is open, the piston moves from…

3) As the crankshaft continues to rotate it drives the piston…

4) At the end of the exhaust stroke, the temperature of the gases…

5) *In a two – stroke engine all the four processes comprising the working cycle are completed during two stroke of the piston…*

Вариант 8

Fuel System

The fuel System is designed **to store liquid gasoline** and to deliver it to the **engine cylinders** on the intake **stroke** in the form of **vapor mixed** with air. The fuel system must vary the proportions of air and **gasoline vapor** to meet the requirements of the various operating conditions. Thus for **initial starting** with a cold **engine** a very rich mixture of about 9 pounds of air to 1 pound of gasoline is needed. After the engine has warmed up, it will run satisfactorily on a leaner mixture of about 15 pounds of air for each pound of gasoline. For **ensuring acceleration** and full **load** or high **speed operation**, the mixture must again **be enriched**.

The fuel system consist of a tank in which **the liquid gasoline is stored**, a fuel line, or **tube,** through which the gasoline can be brought from the tank to the engine, **a pump**, which **pulls the gasoline** through the fuel line, and a carburetor, which mixes the gasoline with air. **The carburetor is designed** to mix each pound of gasoline with 9 to 15 pounds of air under various operating conditions. The richer mixtures of about 9 pound of air per pound of gasoline are for starting, **initial** warm-up, and acceleration, while the **leaner** mixtures of about 15 pounds of air per pound of gasoline are for normal over-the road operation.

Задания:

1. **Переведите на русский язык следующие слова и словосочетания:**

The fuel System, store liquid gasoline, engine cylinders, vapor mixed, initial starting, acceleration, or tube, pulls the gasoline, the carburetor is designed

2. **Переведите письменно текст**

3. **Переведите на русский язык встречающие в тексте интернациональные слова:**

Design system, carburetor, normal.

4. Закончите предложения, выбрав их из текста

1. *The fuel System is designed…*

2. *After the engine has warmed up, it will run satisfactorily on a leaner mixture of about...*

3. *The fuel system consists of a tank in which…*

4. *The carburetor is designed to mix each pound of gasoline*

Вариант 9

Cooling system

Then an **internal-combustion engine** operates, the parts coming in contact with hot gases are strongly heated. If the temperature of **the pistons**, cylinder heads, valves and cylinders becomes too high, **undesirable effects** appear such as **deterioration of cylinder filling, power reduction ignition of fuel.** Very often the oil **burns out** and loses **its lubricating properties.**

If the engine is excessively cooled, the **portion** of heat that goes for useful work **diminishes and the power of the engine drops.**

The cooling system consists of the aggregate of all the devices **ensuring** the required thermal duty of the engine.

A water cooling system operates in the following manner: the water present between the cylinder walls and the cylinder heads cools **the heated inner walls** and become heated itself in the process. It often flows to **the radiator**, where it is cooled down by air. The cooled water is again **redirected** to the engine water **jacket.**

Forced cooling, when the water is circulated by a pump, is most common in modern engines. Cooling systems may be open or closed. In the first case, the volume of the system is not closed **tightly**. In the second case **the plug** of the cooler is provided with **a two-way steam-air valve,** which is opened by an excess **pressure** of steam in the system and also when the pressure in **the cooler drops** below atmospheric by 0.05-0.02 kg/cm2.

To enable the engine to operate normally, the temperature of the cooling water should be maintained at 80-90 irrespective of the load and the temperature of the environment. For this purpose and also to speed up the warming of the engine in starting, provision is made for **adjusting** the cooling rate which can be varied by changing the volume of the air stream passing through the cooler and also by changing the rate of water **circulation.**

In addition to water cooling, modern international-combustion engines, especially **low-power types,** often air-cool **the ribbed** cylinder surfaces with the aid of **fans.**

Задания:

1. Переведите на русский язык следующие слова и словосочетания

internal-combustion engine, the pistons, undesirable effects, lubricating properties, diminishes and the power of the engine drops, ensuring, the heated inner walls, the plug, a two-way steam-air valve, the cooler drops, circulation,

low-power types, cooling system.

2. **Переведите следующий абзац**

To enable the engine to operate normally, the temperature of the cooling water should be maintained at 80-90 irrespective of the load and the temperature of the environment. For this purpose and also to speed up the warming of the engine in starting, provision is made for adjusting the cooling rate which can be varied by changing the volume of the air stream passing through the cooler and also by changing the rate of water circulation.

3. Закончите предложения, выбрав их из текста

1) *The cooling system consists of the aggregate of all the devices…*

2) Cooling systems may be open or closed. In the first case, the volume of the system is…

3) Cooling systems may be open or closed. In the first case, the volume of the system is…

4) To enable the engine to operate normally, the temperature of the cooling water should be…

5) In addition to water cooling, modern international-combustion engines, especially…

Вариант 10

Lubricating System

Lubricants may **be supplied** to **rubbing surfaces by splashing, by gravity or under pressure.** Modern engines generally have **lubrication systems** in which all the three methods are **simultaneously** employed.

The lubrication systems of various engines and how they work differ but little at present. Pressure is used to lubricate main and **crankpin bearings of crankshafts**, **piston pins, crankshaft bushes, timing gears and valve rocker** arms. The rest of the parts are splash lubricated.

Gear oil pump delivers oil through **channel and oil line to coarse-mesh filter.** After passing through the coarse-mesh filter the oil passes under the cap **of fine-mesh filter**. With the engine warmed up, the oil flows farther along oil line to oil cooler **mounted** in front of the water cooler. The cooled oil returns to the filter unit and then to central main.

Oil pumps employed in engines can **be subdivided** into three types – **gear, rotary and plunger.** Gear pumps are the simplest and most **reliable in operation** and are therefore the most **widespread.** They are mounted on all modern Soviet engines.

Filters remove the products of wear**, particles of carbon, resin and dust and other mechanical impurities from the lubricant.** Three types of filters – **gauze, coarse-mesh and fine-mesh – are installed in modern engines.**

Oil coolers are used in many automotive engines. They are mounted outside as a rule, near the water cooler, and serviced by **a common fan.** In this case the **design** of the oil and water coolers is almost **identical.**

Control instruments indicate the condition of oil in the system.

Задания:

1. Переведите слова и словосочетания на русский язык:

Lubricants, splashing, gravity, pressure, lubrication systems, piston pins, timing gears, valve rocker, Gear oil pump, coarse-mesh filter, plunger, widespread, fine-mesh, carbon, condition

2. Закончите предложения, выбрав их из текста

1) Modern engines generally have ….

2) Gear oil pump delivers oil through channel and oil line to…

3) Oil pumps employed in engines can be subdivided into three types…

4) Oil coolers are used in…

3. Переведите письменно текст, обращая внимание на изученный лексико-грамматический материал

Вариант 11

Transmission

GENERAL-PURPOSE MECHANISM

A large number **of machines** differing in purpose, principle and design are provided with mechanisms which perform similar **functions**. Among such mechanisms are **transmissions,** which are combinations of parts for **conveying energy** from the prime mover to the operating members. Transmissions can be classified as follows:

a) by the **mode** of energy transmission**: mechanical, electric, hydraulic, pneumatic and combination types**

b) by the mode of **energy distribution**: to one, two or several operating members

c) by operating conditions: **continuous or intermittent**

In electric, hydraulic or pneumatic transmissions the mechanical energy **obtained** from the **prime mover** should be **converted** by a generator unit into the kind of energy employed in the given transmission.

Direct current for the mechanism servicing engines is produced by a generator unit consisting of an electric current generator **rotated** by a diesel or by an a-c **electric motor powered** from the mains.

Direct current gives much better possibilities for **adjusting** the speed and changing the **torque** of the engine when the machine operates **under variable load.**

Задания:

1. Переведите слова и словосочетания на русский язык:

Functions, transmissions, mechanical, electric, hydraulic, pneumatic and combination types, energy distribution, continuous or intermittent, prime mover, rotated, adjusting, torque, under variable load.

2. **Закончите предложения, выбрав их из текста**

1) Among such mechanisms are…

2) By the mode of energy transmission…

3) In electric, hydraulic or pneumatic transmissions the mechanical energy obtained from the…

4) Direct current gives much better possibilities for adjusting the speed and changing the torque…

3. Переведите на русский язык встречающие в тексте интернациональные слова:

Mechanism, transmissions, classified, mechanical, electric, hydraulic, pneumatic and combination types, energy, a generator, diesel,

2. Заполните таблицу

Number	**Classify**
1	
2	
3	

Приложение

Словарь технических терминов

A

Appearance - появление

Advertisement - объявление

Abolition - отмена

Automobile industry – автомобильная промышленность

Advantage - преимущество

Adjustment – порядок

Acceleration - акселерация

Available – имеющий в распоряжении

Admission stroke – доступ такта

B

Battery - батарея

Body - кузов

Braking systems – тормозная система

Burns out – выгорать, сжигать

C

Collect antique cars –коллекционировать антикварные машины

Construct - конструировать

Clutches - сцепление

Carburetor engines –коорбюраторный двигатель

Compression - компрессия

Cooling system – система охлаждения

Cooler drops – холодная капля

Circulation - циркуляция

Crankshaft – коленчатый вал двигателя

Cardan - кардан

Control - контроль

Corrosion -коррозия

Comfortable - удобный

Conveniences - удобства

Connect - связывать

Cableway –канатная дорога

Combustion mixture –горючая смесь

Channel -канал

Carbon - карбон

Condition – условия, состояние

Conveying energy – передавать энергию

Combination types –комбинированный тип

Convert – конвертировать, преображать

D

Determine - определять

Diesel engine –дизельный двигатель

Design - дизайн

Distributor - распределитель

Differential - дифференциал

Dependable brakes – устойчивые тормоза

Dimension - величина

Distribution - распределение

E

Escort - сопровождать

Efficient -эффективный

Engine - двигатель

Endure high overloads – тяжёлая загрузка

Ensuring - обеспечение

Enrich - обогащать

Exhaust stroke – выхлопная труба

Electric - электрический

Effort - усилие

Energy - энергия

F

Four-cylinder engines – четырёх цилиндровый двигатель

Fuel economy – экономия топлива

Fuel pump – топливная помпа

Fuel System – топливная система

Fan - вентилятор

Frequently -частотность

Formation - формация

Functions -функции

G

Gasoline engines –газовый двигатель

Gas turbine – газовая турбина

Gear box – коробка передач

Gasoline vapor - выхлоп

General - общий

Gravity -гравитация

Gear oil pump –топливный насос

Generator - генератор

H

Highest load –самая высокая загрузка

Heated inner walls – отопление стен

Heater -отопление

Hydraulic - гидравлический

Horse-driven buses – лошадиные силы автобуса

I

Issue -выпуск

Introduce -представлять

Internal-Combustion engines – двигатель внутреннего сгорания

Initial starting –начальный запуск

Invention - изобретение

Instrument – инструменты

Indicate -указывать

Intermittent -

Inject – инжектор

J

Jacket - чехол

K

Kinetic energy – кинетическая энергия

L

Lubricating property – смазочные устройства

Liquid -жидкость

Lubricating systems – система смазки

Laboratory tests – лабораторные тесты

Long service life – долгий срок службы

Lorry -грузовик

M

Mode formation – метод формации

Manufacturing cars –производство автомобилей

Mass production – массовое производство

Method - метод

Material - материал

Motor cycles -цикл

Multi-cylinder engines

Motor car - автомобиль

Mixture -смешивание

N

Normal - нормальный

O

Outlawed -

Operation - операция

Omnibuses - омнибус

Oil - масло

Obtain - получать

Offer - предлагать

Optimal solutions – оптимальное решение

P

Process - процесс

Prevent -предотвращать

Portion –доля, порция

Plug – вилка, вставлять

Pressure -давление

Pulls the gasoline – спускать бензин

Pump - помпа

Power train – силовая передача

Power plants – силовая установка

Propeller - пропеллер

Pushes down - нажимать

Put into mass production – запустить в массовое производство

Pipe-line - трубопровод

Petrol engines –бензинный двигатель

Power stroke – рабочий ход поршня

Piston –поршень

Q

Quality – качество

R

Range - ряд

Reduction - снижение

Redirect - переворот

Road tests – дорожные тесты

Requirement - требование

Rigid quality control –качественный контроль

Rapid in acceleration – ускорение

Reliable -надёжный

Rotate - вращать

S

Steam engine – паровой двигатель

Speed - скорость

Seat - место

System - система

Source of current – источник

Suction stroke – секция хода

Safety - безопасность

Splash -брызги

Speedometer - спидометр

Steering system – рулевая система

Stroke engine –ход двигателя

Simultaneously - симуляция

Subdivided - разделено

T

Torque – крутящий момент

Thermodynamic – термодинамик

Turbine - турбина

Transport - транспорт

Trams - трамвай

Trolleybuses - троллейбус

Timing gears – легкая передача

Transmission - трансмиссия

U

Use - использовать

V

Vehicle – транспортное средство

Valve - клапан

W

Wheels -колесо

Weight - вес

Water supply – поставка воды

Way - путь

Widespread –широко распространенный

Z

Zone –зона

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