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**ОГСЭ.03 ИНОСТРАННЫЙ ЯЗЫК В ПРОФЕССИОНАЛЬНОЙ  
ДЕЯТЕЛЬНОСТИ**

**УЧЕБНО-МЕТОДИЧЕСКИЕ УКАЗАНИЯ К ПРАКТИЧЕСКИМ  
ЗАНЯТИЯМ**


для обучающихся 2- 3 курсов  
специальности


**23.02.07. «Техническое обслуживание и ремонт двигателей, систем  
и агрегатов автомобилей»**

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Учебно-методические указания к практическим занятиям

предназначены для обучающихся 2- 3х курсов колледжа, обучающихся по специальности 23.02.07. «Техническое обслуживание и ремонт двигателей, систем и агрегатов автомобилей»

Учебно-методические указания к практическим занятиям состоят из заданий, упражнений и текстов по истории автомобилестроения, по развитию различных средств городского транспорта, по двигателям и основным компонентам и механизмам автомобиля, а также включены сведения и задания по материалам, применяющихся по инструкциям по технике безопасности при ремонте и вождении автомобиля. В заключительной части учебно-методических указаний к практическим занятиям п предложен краткий грамматический справочник.

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## Introduction.

Учебная дисциплина «Иностранный язык в профессиональной деятельности» относится к общему гуманитарному и социально-экономическому циклу основной профессиональной образовательной программы и является обязательной для изучения студентами СПО. Раздел состоит из четырех тем, нашедших отражение в данном учебно-методическом пособии для практических занятий обучающихся - *The history of building of cars, Means of transport, Motor car components, Engines*. Каждая тема состоит из лексических и грамматических упражнений, текстов и диалогов, а также послетекстовых упражнений. Работа над языковым материалом начинается с введения и закрепления лексики, а для ее активизации предложены различные типы упражнений. В конце пособия предложены таблицы по рассматриваемому грамматическому материалу. К данному пособию прилагается терминологический словарь.

В результате освоения раздела студенты должны уметь:

- общаться (устно и письменно) на иностранном языке на профессиональную тематику;
- переводить (со словарем) иностранные тексты строительной направленности;
- пересказать текст, опираясь на план и используя вводные фразы;
- выделить основную мысль текста и высказать ее на английском языке;
- задавать все виды вопросов;
- употреблять нужное грамматическое время в предложениях;
- рассказать о любом создателе автомобилестроения;
- рассказать о преимуществах и недостатках различных видов транспорта;
- рассказать о современных средствах транспорта,
- рассказать о различных двигателях.

В результате освоения раздела студенты должны знать:

- лексический и грамматический минимум, необходимый для чтения и перевода (со словарем) иностранных текстов по данной специальности ;
- значение и уместность употребления различных английских аффиксов;
- сложные времена английского глагола в действительном и страдательном залоге.

Для проверки полученных знаний и умений по каждой теме проводится контрольная работа, по темам *Motor cars components*, *Engined* студенты выполняют задания по самостоятельной работе в виде докладов и презентаций.

# Unit I. THE HISTORY OF CARS BUILDING

**Task 1. a).** *Study information.*

## Types of affixes.

### 1. Affixes of nouns:

- ion / - sion / -tion; -ure / -ture; -ment; -ance / -ence - *abstract nouns*;
- er / -or - *denotes a job*;
- ing - *process*;
- ty / -ity; -ness - *property, attribute*.

### 2. Affixes of adjectives:

- ic; -able / -ible; -ant / -ent ; -ive; -ous; -al; -ful – *presence of the characteristic expressed by stem*;
- less - *lack of quality*;
- un / -in / -ir / -il / -im - *opposite, not*.

### 3. Affixes of verbs:

- ize – from noun, to acquire the features of noun;
- re- (prefix) *again or back*.

**b).** *Find in the dictionary all meanings of the words. Construct all possible words adding any affixes.*

*Example: research – researcher (noun), construct – constructive (adjective), write - rewrite (verb).*

1. Engineer \_\_\_\_\_
2. Build \_\_\_\_\_
3. Application \_\_\_\_\_
4. Construct \_\_\_\_\_
5. Utilize \_\_\_\_\_

**Task 2.** *Use the table to construct statements about buildings and builders.*

Her father	is are have has	a builder.
Builder		an honorable profession.
The builder's profession		many old bridges in our town.
There		pads to protect their hands.

**Task 3.** *Read and translate the following word combinations into Russian.*

1. Profession of civil engineer \_\_\_\_\_
2. Branches of civil engineering \_\_\_\_\_
3. Utilization of materials and forces of nature \_\_\_\_\_
4. To protect oneself against the elements \_\_\_\_\_

5. Civil engineering \_\_\_\_\_
6. Mechanical engineering \_\_\_\_\_
7. Electrical engineering \_\_\_\_\_
8. Nuclear engineering \_\_\_\_\_
9. Mining engineering \_\_\_\_\_
10. Military engineering \_\_\_\_\_
11. Marine engineering \_\_\_\_\_
12. Sanitary engineering \_\_\_\_\_

**Task 4.** Read and translate the text.

### **Automotive Engineering**

The automobile has undergone significant changes largely due to advancements in the **automotive engineering** industry. Behind every car, truck, bus or bike on the roads and in the store there is an automobile engineer who played a key role in their design and construction. Because of the massive amount of vehicles on the roads today, the automobile engineering industry has a lot of responsibility both to ensure the safety of those vehicles and to make them more efficient.

Automobile engineering employs different engineering disciplines to assist in the design and manufacture of any kind of vehicles such as cars and buses, bikes and trucks. So, for example, one automobile engineer is in charge of working on the body of the vehicle to make sure that it is as aerodynamic as possible. It leads to performance maximization and makes sure that a vehicle uses as little fuel as possible. While another is working on the structural integrity of the vehicle to make sure that in case of any sort of crash, the people inside the vehicle are as protected as possible, and so on. If you imagine all the components that make up a vehicle, then it is clear that there is someone who is responsible for making sure that a vehicle functions properly. Some of these jobs and tasks overlap. To make sure that all these subsystems of the car work together there is generally a systems engineer or a development engineer who has an overseer role.

To undergo significant changes – подвергаться значительным изменениям;

A key role – основная, ключевая роль;

Responsibility – ответственность;

To ensure the safety of the vehicle – обеспечивать безопасность транспортного средства;

To assist – помогать, содействовать;

Performance maximization – максимизация рабочих характеристик;

To make up – являться частью, составлять;

Overseer – контролер, инспектор, мастер.

**Task 5.** Answer the following questions.

1. What is engineering?
2. What branches does engineering encompass?
3. What branches does automobile engineering employ?
4. Who is responsible for making sure that a vehicle functions properly?

**Task 6.** *Agree or disagree with the following statements and add some more information if needed.*

1. The automobile has undergone significant changes due to advancements in the automotive engineering.
2. Automobile engineers play a key role in the design and construction.
3. It is a vehicle as aerodynamic as possible, it leads to performance maximization.
4. There is nobody who is responsible for making sure that a vehicle functions properly.
5. A development engineer has not got an overseer role.

**Task 7.** *Use these clichés to retell the text.*

I'm going to retell.....

In the beginning of.....

I've known that.....

It was interesting to know that.....

Speaking of..... it turned out that.....

The fact that ..... was new for me.....

It goes without saying that .....

Moreover (Furthermore).....

To sum up .....

In conclusion .....

However .....

**Task 8.** *Read, translate and complete the dialogue.*

**Teacher:** Today we are going to discuss the development of different branches of engineering. Can you name any?

**Student:** Yes, certainly. The most important of them are: civil, mechanical, electrical, nuclear, mining, military, marine and sanitary engineering.

**Teacher:** Let's remember the fields of civil engineering.

**Student:** In the whole, civil engineering makes housing, industrial construction; the construction of highways, city streets and railroads.

**Teacher:** Explain, please, the fields of mechanical and military engineering.

**Student:**.....

**Task 9.** *Read and translate the text.*

### **The history of land transport**

1. The word *transport* means to carry people or goods from place to place. It is also used for the vehicles that carry people or goods for example; motor transport includes buses, lorries, motor coaches and motor cars. The American word for the same thing is *transportation*, and the remark "transportation is civilization" was made by an American, the motor-car manufacturer Henry Ford.

2. The history of transportation is divided into two stages. The first stage is that in which all forms transport depended directly on the power of men or animals or on natural forces such as winds and current. The second stage began with the development of the steam engine, which was followed by the electric motor and the internal combustion engine as the main sources of power for transport.
3. The most ancient peoples were probably wanderers. They did not live in settled homes because they did not know how to till the soil. As they moved from place to place they had to carry their goods themselves. The porters were usually the women, probably because the men had to be ready to beat off attacks by wild beasts or enemies. Even now, to carry the household goods is the job of women in backward wandering tribes.
4. The next step was the use of pack animals for carrying goods. The kind of animal used varied in different places, ut the general idea was the same – the bundles or baskets were carried by the animals on their backs. The dog, although too small to carry much, was probably one of the first transport animals used because it is so easily trained. Dogs are still to be trained for dragging sledges in the Arctic because of their light weight.
5. The next advance in land transport came with the invention of the wheel. The wheel at once led to the development of two-wheeled carts and four-wheeled wagons and carriages, but before these could be used for carrying goods over long distances, a system of roads was necessary. These roads had to be wide enough to take a cart and paved, for unless their surface was paved the wheels sank in and the cart stuck. In Britain, and also over much Europe, the first long-distance paved roads were made by the Romans, chiefly so that troops could be marched without delay from place to place. The roads made it possible to use wheeled traffic. However, when the Roman Empire collapsed, the roads gradually got into a very bad state.
6. There were two problems to be solved – first, how to make good roads, and, second, to dicide who was to pay for them. In Great Britain these problems were solved in the 18<sup>th</sup> century. Stretches of roads were handed over to groups called *trusts*. The trusts borrowed money for repairing and improving the roads, paying it back from the sums they collected from road users. This method of paying for new roads and bridges is still used, especially in the United States,
7. Then it became possible to travel rather comfortably by coaches. In cities like London, rich people had their own carriages, while poor people went on horseback or walked. Then appeared carriages that could be hired for short distances. They correspond to the modern taxis. The word is short for *yaxi cab* which in turn comes from the words *taximeter* and *cabriolet*. A cabriolet is a light two-wheeled carriage introduced from France in the 19<sup>th</sup> century. The taximeter is a mechanical device connected with the wheels which, by measuring the distance travelled, shows the fare due at any moment. It is also controlled by a clock so that waiting time too is charged for.

**Task 10.** Find in the text the passage describing how financial problems were solved in Great Britain and the United States and translate them into Russian.

**Task 11.** Fill in the chart and give your reasons

	Group 1	Group 2	Group 3	Group 4
The car is our				

friend				
The car is our enemy				

**Task 12.** Read the following arguments. Think of some more.

<i>The car is our friend</i>	<i>The car is our enemy</i>
1. It saves our time. 2. It carries our luggage. 3. It gives us comfort while travelling. 4. It gives us the opportunity to travel and see the world around. 5. It brings help quickly (police, ambulance, fire engines).	1. It makes noise. 2. It causes air pollution. 3. Many people are killed or injured in car accidents. 4. It causes traffic jams. 5. You don't walk enough and it does harm to your health.

**Task 13.** Use correct forms of adjectives.

- Civil, mechanical, electrical, nuclear, mining, military engineering branches are (*important*) \_\_\_\_\_ ones.
- Civil engineering is (*old*) \_\_\_\_\_ than nuclear one.
- Railway transport is still one of (*cheap*) \_\_\_\_\_ ways of hauling freight over long distances.
- The line covering 854 m. is much (*short*) \_\_\_\_\_ than distance line in 644 km. Nowadays air transport is (*fast*) \_\_\_\_\_ way of communication.

**Task 14.** Choose the correct forms of verbs.

- During the last hundred years many new methods of building \_\_\_\_\_.  
a) has been discovered, b) have been discovered, c) will has been discovered
- One of the most recent discoveries \_\_\_\_\_ the usefulness of steel as a building material.  
a) is, b) were, c) be
- Nowadays it \_\_\_\_\_ often necessary to have a very fast transport.  
a) is, b) are, c) were

**Task 15.** Read and translate the text.

### The history of road markings.

In 1911 in Wayne County (округ), Michigan, an automobile driver observed a collision on a narrow bridge between a horse and a buggy (новозка), and an automobile going into opposite directions. Each of the drivers was sure that he was on his own side of the road. The observer was Edward Hines, the governor of the county.

Mr. Hines immediately decided that it must be possible for drivers to determine with certainty where their side of the road was. He ordered a white line painted on the centre of every bridge and every turn within his county.

Subsequently he had his idea extended to all the highways of the county. The centre line and various pavement markings have unquestionably saved many lives. They are now one of the most effective means of controlling traffic.

**Task 16.** *Make your own questions for any 3 sentences of the text above.*

## Unit II. MEANS OF TRANSPORT

**Task 1.** *Read, translate the text and find answers to the given questions.*

### Different kinds of land transport

**1. What was the reaction of the people after the invention of the steam engine?**

In Washington the story is told of a director 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 internal combustion engine.

**2. 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 produced the first cheap motor car, the famous Ford Model “T”.

**3. When did diesel-engined 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,

**4. 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 the 20<sup>th</sup> 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 19<sup>th</sup> 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. Another form of transport used in London, Paris, Berlin, Moscow, St. Petersburg, Kiev and some other crowded cities is the underground railway.

London's first underground railway of the "tube" was opened in 1863, the Moscow underground in 1935.

**Task 2.** Find the meaning of new words in dictionary and use them in your own sentences.

To adopt	Truck or lorry	Non-road mobile machinery
To be devoted	To vary	To install the internal combustion engine
Vehicles and trailers	Bulky equipment	Earthmoving machinery
To be defined	Non-self-propelled vehicles	Off-road vehicles
Carriage	To be towed	Paved or gravel surface
Omnibuses and coaches	Purpose	Capable
Chassis frame, engine, fuel	Motor caravans, armoured vehicles, ambulances	Tyres with deep open treads
Desirable	Wheeled, with caterpillar tracks	Flexible suspension
Goods	To pull, to push	Versatile

**Task 3.** Divide the following words or phrases into four groups

1. Passenger vehicles: \_\_\_\_\_
2. Vehicles for the carriage of goods: \_\_\_\_\_
3. Non-road mobile machinery: \_\_\_\_\_
4. Off-road vehicles: \_\_\_\_\_

Coach, truck, pickup, omnibus, scraper, gravel surface, flexible suspension, lorry, excavator, caterpillar track, grader, bus, motor car, bulky equipment, large tyres, bulldozer, deep open treads.

**Task 4.** Read and translate the text, try to focus on its essential facts and choose the most suitable heading given below for each paragraph.

- 1) Trailers and Semi-trailers
- 2) Off-road Vehicles
- 3) Passenger Vehicles
- 4) Classification of Vehicles
- 5) Non-road Mobile Machinery
- 6) Vehicles for the Carriage of Goods
- 7) Special Purpose Vehicles
- 8) Tractors

## Vehicle categories

On the 30<sup>th</sup> of November, 2011 at the World Forum for Harmonization of Vehicles, the Inland Transport Committee of Economic Commission for Europe adopted “Consolidation Resolution on the Construction of Vehicles”. One of the units of the resolution is devoted to the classification of power-driven vehicles and trailers. Vehicle categories are defined according to the following classification: motor vehicles with at least four wheels designed and constructed for the carriage of passengers (category “M”), motor vehicles with at least four wheels designed and constructed for the carriage of goods (category “N”); trailers (category “O”); special purpose vehicles; agricultural and forestry tractors (category “T”); non-road mobile machinery; off-road vehicles (category “G”).

There are numerous types of passenger vehicles: light passenger vehicles (motor cars or cars), people carriers or mini-buses, buses (omnibuses), coaches, etc. They may be classified according to the types of chassis frame, engine, fuel, as well as the purpose for which they are used.

Motor vehicles for the carriage of goods include light commercial vehicles (also light goods vehicle) and large goods vehicles, LGV (also heavy goods vehicle, HGV). A large goods vehicle is the European Union (EU) term for any truck (lorry) with mass over 3,5 tones. Trucks vary greatly in size, power and configuration. Light commercial vehicles with mass not more than 3,5 tones are called light vans. When a vehicle is required for the transportation of bulky equipment, a pickup would be often desirable.

Trailers and semi-trailers are non-self-propelled vehicles. It is required that they should be towed by power-driven vehicles.

Special purpose vehicles embrace the vehicles of categories “M”, “N” or “O” for the carriage of passengers or goods and for performing special functions with special body arrangement and equipment. They include motor caravans, armoured vehicles, ambulances, etc.

Agricultural and forestry tractors are power-driven vehicles, either wheeled or caterpillar tracks, which are designed to pull, push, carry or actuate certain tools, machines or trailers.

The term “non-road mobile machinery” means any mobile machine, transportable industrial equipment or vehicle with or without body not intended for the use of passenger- or goods- transport on the road, in which the internal combustion engine is installed. Non-road mobile machinery, such as scrapers, bulldozers, graders, excavators, etc.

Off-road vehicles are considered to be any types of vehicles which are capable of driving on and off paved or gravel surface. They are generally characterized by having large tyres with deep open treads, a flexible suspension, or even caterpillar tracks. They have a versatile application, e.g. several types of motorsports involve off-road vehicles.

**Task 5.** *Agree or disagree with the following statements.*

1. The classification of power-driven vehicles was defined at the World Forum for Harmonization of Vehicles.
2. Numerous types of passenger vehicles are known to be included into category “M”.
3. Category “G” represents off-road vehicles.
- 4.

Light commercial vehicles are considered to be passenger vehicles. 5. Agricultural tractors may be either wheeled or with caterpillar tracks. 6. The vehicles of “M”, “N” or “O” categories may be special purpose vehicles. 7. Trailers are non-propelled vehicles.

**Task 6.** Match the adjectives in column A with the nouns in column B:

A		B	
1	agricultural	a	classification
2	numerous	b	equipment
3	following	c	Union
4	special	d	tools
5	mobile	e	tractors
6	European	f	body
7	bulky	g	types
8	internal	h	machinery
9	flexible	f	suspension
10	certain	j	combustion

1 \_\_\_\_, 2 \_\_\_\_, 3 \_\_\_\_, 4 \_\_\_\_, 5 \_\_\_\_, 6 \_\_\_\_, 7 \_\_\_\_, 8 \_\_\_\_, 9 \_\_\_\_, 10 \_\_\_\_.

**Task 7.** Identify these phrases at the sentence level in the text .

**Task 8.** Find out 8 words on the topic “Means of Transport”:

x	s	t	i	f	n	e	s	s	i
u	d	e	f	0	r	m	s	t	d
w	i	z	u	r	0	0	a	r	g
p	e	e	r	c	w	z	y	e	e
x	i	s	t	e	e	l	0	n	h
w	y	0	0	l	l	a	z	g	g
s	s	e	n	h	g	u	0	t	n
f	r	a	c	t	u	r	e	h	c

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_

**Task 9.** Decide which of the verbs on the left collocate with the nouns on the right and then identify the word combinations at the sentence level in the text:

1.	To adopt	a	categories
2.	To perform	b	classification
3.	To tow	c	functions
4.	To involve	d	resolution
5.	To define	e	trailers
6.	To be devoted to	f	tools
7.	To actuate	g	goods
8.	To carry	h	vehicles
9.	To board	i	engines
10.	To install	j	coaches

1.		2.		3.		4.		5.		6.		7.		8.		9.		10.	
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**Task 10.** Read the text again and complete the following sentences, change the word in capitals at the end of each sentence to form a word that fits suitably in the blank space,

1. "A large good vehicle" is the ..... Union term for any truck EUROPE.
2. This vehicle has special body ..... ARRANGE.
3. It depends on the ..... of the vehicle CONSTRUCT.
4. The LGV is for the ..... of goods TRANSPORT.
5. This vehicle is for the carriage of the special..... EQUIP.

**Task 11.** Insert the words at the sentence level: fill in the blanks with the missing words (the first letter of each word is given).

1. V... categories are defined according to the classification.
2. There is a classification of power-driven vehicles and t....
3. Passenger vehicles may be classified according to the types of e.....
4. Pickups are usually used for b.... equipment.
5. Trucks v..... in power and configuration.
6. Special purpose vehicles include armoured vehicles, a....., etc.
7. Agricultural tractors pull and p.... trailers.
8. The internal c..... engine is installed in the motor car.
9. The off-road vehicles have a v..... application.

**Task 12.** Fill in the blanks to streamline the use of the Subjunctive Mood. The words in brackets are given to help you.

1. It ..... useful to investigate this problem (to be).
2. There ..... no results without these experiments (to be).
3. He suggested that you ..... this article (to read).
4. I wish I ..... about it (to know).
5. I brought the book for you so that you .....(to read).
6. If I were you, I .... These lectures (to attend).
7. If you had visited the library yesterday, you ..... some more information about it (to find).
8. It ....., difficult to define this term (to be).
9. It is necessary that they ..... there with me (to go).
10. It ..... to the point to read this book (to be).

**Task 13.** Make up sentences according to the models to practice the use of the Subjunctive Mood

**Model A:** *Было бы интересно побывать на этой конференции.*  
*It would be interesting to attend this conference.*

1. Было бы интересно прочитать эту статью.
2. Было бы желательно выучить эти термины.
3. Было бы трудно решить эту проблему.
4. Было бы полезно обработать эти данные.
5. Было бы кстати посетить этот музей.

**Model B:** *Хотелось бы, чтобы этот автомобиль понравился вам.*  
*I wish you like this motor car.*

1. Хотелось бы, чтобы вы купили этот автомобиль.
2. Хотелось бы, чтобы вы определили этот термин.
3. Хотелось бы, чтобы вы приняли эту резолюцию.
4. Хотелось бы, чтобы вы использовали это оборудование.
5. Хотелось бы, чтобы вы поехали в автобусе.

**Task 14.** *Read and translate the text.*

### **Buses and coaches**

Buses (also called omnibuses) are designed to transport about forty passengers. In towns and cities there are usually short distances between stops, and speed of loading and unloading passengers is very important. The entrance step to the bus is about 300mm above the road and it provides an easy step up. Another step up leads to the deck of the bus. The doors are usually power-operated by the driver to prevent passengers getting on or off while the bus is moving. A double-decker bus is carrying about sixty passengers. In modern designs the entrance is at the front for the driver to have a direct view of boarding passengers.

A coach is a type of a bus for conveying between thirty and forty passengers on excursions or for fairly long distances between towns and even countries. Unlike buses designed for shorter journeys, coaches have a luggage hold separate from the passenger cabin and are normally equipped with facilities required for longer trips: comfortable seats, air-conditioning, overhead luggage compartments, small tables for small snacks, video screens to show movies, and sometimes even a toilet.

**Task 15.** *Agree or disagree with the following statements.*

1. Speed of loading and unloading passengers is very important in towns and cities.
2. The doors in buses are not power-operated by the driver.
3. Omnibuses transport about sixty passengers.
4. Coaches are just the same as buses.
5. Coaches are usually equipped with facilities required for longer trips.

**Task 16.** *Find English equivalents from the text above.*

1. посадка и высадка пассажиров \_\_\_\_\_,

2. обеспечивать \_\_\_\_\_,
3. препятствовать \_\_\_\_\_,
4. для перевозки пассажиров \_\_\_\_\_,
5. благоприятные условия \_\_\_\_\_,
6. багаж \_\_\_\_\_,
7. с полным мастерством \_\_\_\_\_,
8. лучше всего характеризуется \_\_\_\_\_.

**Task 17.** Ask questions and use the words in italics in your answers. The words in brackets will help you.

1. The doors are usually power-operated by the driver *to prevent passengers getting on or off while the bus is moving* (why).
2. The entrance is at the front *for the driver to have a direct view of boarding passengers* in modern buses (why).
3. We may decode “LGV” *as “light goods vehicle”* (how).
4. “LGV” is an official EU term (what).
5. “HGV” means “*heavy goods vehicle*” (what).

**Task 18.** Read, translate and act the dialogue.

### “LGV” and “HGV”

A.: Would you be so kind as to explain what the abbreviation “LGV” really means? We may decode “LGV” as “light goods vehicle” and also as “large goods vehicle”.

B.: You see, “light commercial vehicle” is the official term used within the European Union for a commercial vehicle with mass not more than 3.5 tonnes. And it has an abbreviation “LCV” . But some parts of the UK use for “a light commercial vehicle” the abbreviation “LGV” and decode it as ‘light goods vehicle’.

A.: So the abbreviation “LGV” should be used for motor vehicles which carry light goods.

B.: Not quite so. “Light goods vehicle” or “LGV”, can be confused with “large goods vehicle”, also “LGV” which is the official EU term for a vehicle with mass of over 3.5 tonnes.

A.: As far as I remember, I have come across the abbreviation “HGV” for such kinds of vehicles.

B.: You are absolutely right. “HGV” stands for “heavy goods vehicle’. And this term is also used. Moreover, the term “medium goods vehicle” is used within some parts of the UK to refer to goods vehicles of between 3.5 and 7.5 tonnes which according to the EU are also “large goods vehicle”.

A.: Oh, it’s not easy to differentiate all these terms...

B.: I do agree with you. I have spent a lot of time surfing the Internet on the point but still have a lot to clear out.

A.: I am interested in everything concerning the vehicles. I’d like to research this problem together.

B.: I don’t mind. Let’s do it right now.

**Task 19.** *Role-play the following situations.*

1. You are present at the World Forum for Harmonization of Vehicles. You are discussing with the representatives from the USA one of the units of the resolution devoted to the classification of power-driven vehicles.
2. While travelling in the coach you are discussing with an English man the coach facilities.

**Task 20.** *Complete the sentences.*

1. Prestressed concrete has been used during ... .
2. Plain concrete is strong in ... .
3. The sagging of a beam made of plain concrete may cause it to ... .
4. Incorporated steel bars in the lower portion of a beam prevent ... .
5. A beam made of prestressed concrete is permanently under ... .
6. Prestressed concrete is now employed extensively for ... .

**Task 21.** *Translate the following sentences from Russian into English.*

1. Категории транспортных средств определяются в соответствии с их классификацией.
2. Категория М включает механические транспортные средства, имеющие не менее четырех колес и используемые для перевозки пассажиров.
3. Категория N включает механические транспортные средства, имеющие не менее четырех колес и используемые для перевозки грузов
4. Механические транспортные средства для перевозки грузов представлены легкими грузовыми транспортными средствами и большими грузовыми транспортными средствами.
5. Прицепы и полуприцепы – это любые несамоходные транспортные средства, которые сконструированы для их буксировки механическими транспортными средствами.
6. Внедорожная подвижная техника включает в себя землеройно-транспортные машины, такие как скреперы, бульдозеры, грейдеры, экскаваторы и др.
7. Транспортные средства повышенной проходимости характеризуются большими шинами с глубокими открытыми протекторами, «мягкой» подвеской или даже гусеничным треком.

**Task 22.** *Make a summary of the text using the following phrases.*

1. The title of the text is.....
2. The text is about... The text deals with...
3. The text covers such points as....
4. It should be underlined that....
5. In conclusion , I may say that.....
6. To my mind..... In my opinion....

A scraper is a heavy earthmoving machine. The rear part has a vertically moveable hopper (also known as the bowl) with a sharp horizontal front edge. The hopper can be very efficient on short distances where the cut and fill areas are close together and have sufficient length to fill the hopper. Most often, scrapers are large and powerful wheeled machines. But some scrapers are tracked heavy machines. The tracks give them excellent ground hold and mobility through a very rough surface.

A bulldozer is a machine equipped with a substantial metal plate (known as a blade) used to push large quantities of soil, sand, or other material. Bulldozers are also used to loosen densely-compacted materials with a a claw-like device (known as a ripper) placwd at the rear. There are two types of bulldozer^ crawler bulldozer (crawler dozer) and wheeled bulldozer (wheel dozer).

A grader is a construction machine with a long blade used to create a flat surface, to finish the “rough grading” performed by scrapers and bulldozers. Graders are commonly used in the construction and maintenance of roads or in the preparation of the base for a wide flat surface for the asphalt to be placed on or to finish grade prior to the construction of large buildings. A more recent innovation is the outfitting of graders with GPS technology.

Excavators tracked or wheeled are heavy construction machines the parts of which are boom, sticks, bucket and cab on a rotating platform (known as the “house”). Excavators are also called diggers, mechanical shovels, or 360-degree excavators (sometimes abbreviated simply to 360).

**Task 23.** The text contains different mistakes: 4- in spelling, 3 – in grammar. Correct the mistakes and rewrite the text.

An automobile, motor car or car are a wheeled motor vehicle used for transporting rather passengers than goods, which are also cary its own engine or motor. Most definitions of the term specifies that automobiles been designed to run primarily on roads, to have seats for one to eight people, and to have typically four wheels.

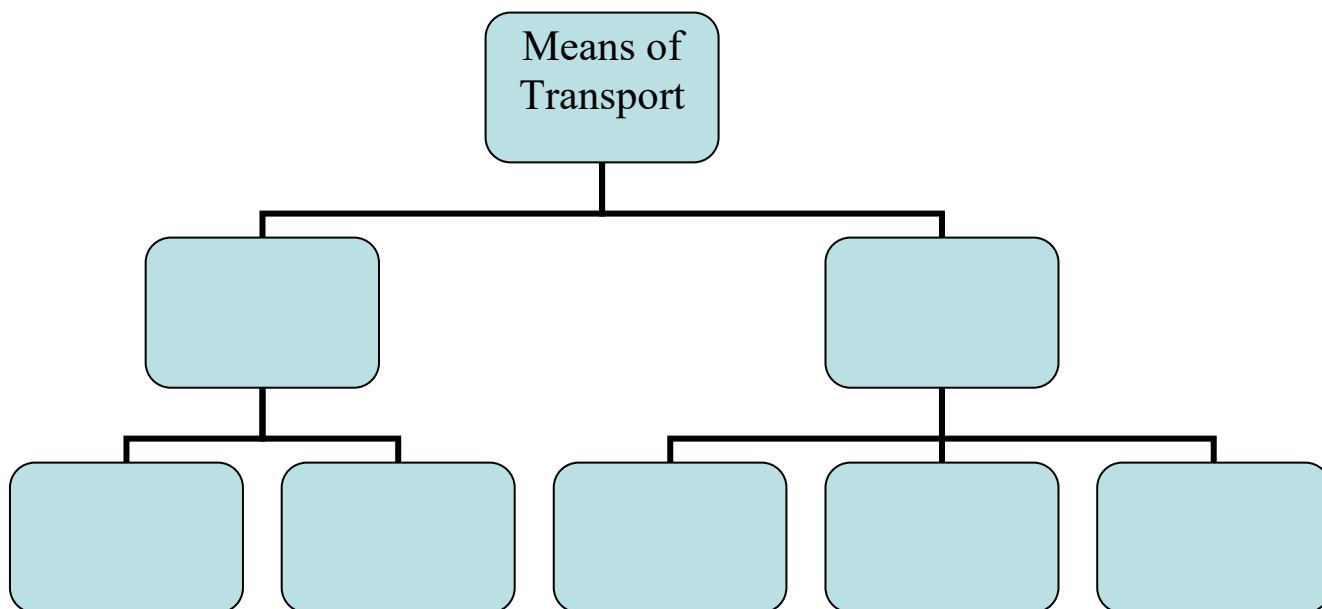
**Task 24.** Match the following words with their Russian equivalents:

1	earthmoving machinery	a	машина «скорой помощи»
2	a trailer	b	грузовик
3	a coach	c	массивный, громоздкий
4	an ambulance	d	туристский автобус
5	bulky	e	прицеп
6	a truck	f	транспортное средство повышенной

			проходимости
7	off-road vehicles	g	землеройно-транспортные машины

1. \_\_\_\_, 2. \_\_\_\_, 3. \_\_\_\_, 4. \_\_\_\_, 5. \_\_\_\_, 6. \_\_\_\_, 7. \_\_\_\_.

**Task 25.** Complete the spidergram.



**Task 28.** Put the following sentences in negative and interrogative form.

1. Category “N” embraces motor vehicles for the carriage of goods. \_\_\_\_\_

2. A double-decker bus carries about sixty passengers. \_\_\_\_\_

3. Vehicles are defined according to their classification. \_\_\_\_\_

4. They defined vehicle categories long ago. \_\_\_\_\_

5. This wheeled tractor pulled the trailer not long ago. \_\_\_\_\_

### **Unit III.**

## **MOTOR CARS COMPONENTS**

**Task 1.** *Read and translate the text, try to focus on its essential facts and choose the most suitable heading given below for each paragraph.*

- 1) Engine
- 2) Suspension System
- 3) Integral Chassis Frame and Body
- 4) Motor Car Components
- 5) Transmission and Drive Lines

### **Motor Car Structure**

A structure of vehicle has to fulfil a number of requirements. The prime purpose of the vehicle structure is to provide a location for all the necessary vehicle systems and components. The purpose of the vehicle will also dictate the size and weight of the vehicle systems and components and therefore the structure will be designed accordingly. The main structural components of a motor car are engine, chassis and body. Chassis embraces transmission (clutch, gear-box, propeller shaft, main shaft, differentials, final drive shafts or half-shafts), drive lines (frame, front and rear axles, suspension and wheels) and steering systems (wheel steering and brake steering).

The usual source of power for a motor car is an internal combustion engine. A petrol (gasoline) engine has traditionally been the most popular for light passenger vehicles. The engine in heavy vehicles is usually a large capacity diesel, the main requirements for which are an ability to produce high levels of pulling power, reliability, and low fuel consumption.

The power of the engine is transmitted through the transmission and drive lines to the drive wheels. For the rear-wheel drive (RWD) layout, the rear wheels act as the driving wheels. Spacing out the main components in this layout makes each unit accessible but a drawback is the intrusion of the transmission components into the passenger compartment. The compactness of the front-wheel drive (FWD) layout has made it very popular on modern cars, especially on small cars. The arrangement of four-wheel drive (4WD) is safer because it distributes the drive to all four wheels and during acceleration it reduces the risks of wheel spin.

The suspension system involving springs, shock absorbers and linkages serves a dual purpose: contributing to the vehicle's handling for good active safety and driving pleasure, and keeping vehicle occupants comfortable and reasonably well isolated from road bumps, vibrations, etc.

Most modern cars are built with an integral chassis frame and body. This frameless or integral arrangement provides a stiff light construction to the motor car, which is particularly suitable for mass-produced vehicles. A suitably designed body shell can withstand various frame stresses. A lightweight unitary construction contains relatively light vehicle systems and components and provides sufficient space for a driver and passengers.

**Task 2.** Agree or disagree with the following statements.

1. To provide a location for all the necessary vehicle systems and components is the prime purpose of the vehicle structure. \_\_\_\_\_
  2. The usual source of power for a motor car is a diesel. \_\_\_\_\_
  3. The front wheel drive layout is rather compact. \_\_\_\_\_
  4. Most of the modern cars are designed with an integral chassis frame and body. \_\_\_\_\_
- 
5. A small passenger vehicle with a light unitary construction doesn't provide sufficient space for a driver and passengers. \_\_\_\_\_

**Task 3.** Translate the following words.

1	engine		21	gearbox	
2	chassis		22	propeller shaft	
3	body		23	drive shafts	
4	petrol (gasoline) engine		24	half-shafts	
5	capacity		25	front and rear axles	
6	pulling power		26	suspension	
7	reliability		27	layout	
8	low fuel consumption		28	rear-wheel drive	
9	transmission		29	front-wheel drive	
10	drive lines		30	four-wheel drive	
11	steering systems		31	accessible	
12	clutch		32	to intrude	
13	to distribute		33	shock absorbers	
14	To reduce wheel spin		34	linkages	
15	springs		35	wheel steering	
16	vehicle's handling		36	brake steering	

17	to isolate		37	integral chassis frame and body	
18	stiff		38	suitable	
19	to withstand		39	unitary	
20	to locate		40	sufficient	

**Task 4.** Match the adjectives in column A with the nouns in column B to form meaningful phrases and then identify them at the sentence level in the text..

A		B	
1	dual	a	space
2	necessary	b	source
3	unitary	c	systems
4	sufficient	d	vehicles
5	structural	e	components
6	usual	f	purpose
7	heavy	g	wheels
8	high	h	arrangement
9	rear	i	levels
10	integral	j	construction

**Task 5.** Decide which of the verbs on the left collocate with the nouns on the right and then identify the word combinations at the sentence level in the text.

1	to fulfill	a	drive
2	to provide	b	risks
3	to transmit	c	requirements
4	to distribute	d	structure
5	to reduce	e	systems and components
6	to withstand	f	location
7	to design	g	vehicle
8	to locate	h	power
9	to serve	i	stresses
10	to handle	j	purpose

**Task 6.** Try to enrich your vocabulary:

a) Find words in the text which have the same meanings as the following words:

To perform, some, most important, aim, to construct, integral, enough, major, parts, motor, big, disadvantage, embrace, different;

b) Find words in the text whose meanings are opposite to the meanings of the following words:

External, heavy, low, passive, old, frameless, unsuitable, unusual;

c) Replace the words in italics with the words with similar meanings:

1. A structure of a vehicle should *perform some* requirements.
2. This vehicle provides *enough* space for a driver and passengers.
3. The *major* structural *parts* of a motor car are engine, chassis,, and body.
4. The rear-wheel drive has a *disadvantage*.
5. The integral chassis frame and body can withstand *different* frame stresses.

**Task 7.** Complete the sentences : change the word in capitals at the end of each sentence to form a word that fits suitably in the blank space..

1. The frameless arrangement is ..... for mass-produced vehicles SUIT.
2. The unitary structure has sufficient space for a .... and passengers DRIVE.
3. In the rear-wheel drive layout each unit is ..... ACCESS.
4. The suspension system involves shock ..... ABSORB.
5. This integral .... Provides a stiff light construction to the motor car ARRANGE.

**Task 8.** Insert the words at the sentence level: fill in the blanks with the missing words (the first word of each word is given).

1. This car provides s... space for vehicle's occupants.
2. Besides p... shaft, transmission embraces m... shaft and half-shafts.
3. S.... is a component of the drive lines.
4. Steering system embraces w.... steering and b.... steering.
5. One of the requirements for the engine is low f.... c.... .
6. The most popular engine for light passenger vehicles is a p.... engine.
7. The s..... system involves springs, shock absorbers, etc.
8. The passengers are isolated from road b.... .
9. This body shell can w..... frame stresses.
10. This frameless arrangement is rather s..... .

**Task 9.** Fill in the blanks to streamline the use of the Present Simple and Present Perfect. The words in brackets are given to help you .

1. The operation .... usually .... By this structure (to fulfill).
2. The engineer ..... already .... the components (to arrange).
3. As a rule, the engine .... high levels of pulling power ( to produce).
4. This suspension system always ..... vehicles

occupants comfortable (to keep). 5. Lately, most cars .... With integral chassis frame and body (to build).

**Task 10.** *Make up sentences according to the models to practice the use of tenses.*

**Model A:** *Как правило она работает в офисе.*

*As a rule, they work in the office.*

1. Как правило, мы выполняем много заданий.
2. Назначение транспортного средства обычно определяет его размер и вес.
3. Небольшое пассажирское транспортное средство обычно использует легкий несущий кузов.
4. Шасси включает трансмиссию, ходовую часть и системы управления.
5. Устройство полного привода снижает риск буксования колес.

**Model B:** *Легкие несущие кузова используются в небольших автомобилях.*

*Lightweight unitary constructions are used in small passenger vehicles.*

1. Все системы и компоненты автомобиля размещаются в несущем кузове.
2. Пружины, амортизаторы и направляющий аппарат входят в систему подвески.
3. Большинство современных автомобилей проектируются с несущим кузовом.
4. Риск буксования колес уменьшается при наличии устройства полного привода.
5. Высокие тяговые показатели обеспечиваются мощными дизельными двигателями.

**Task 11.** *Translate the text into English. Mind the words and phrases given.*

To be fitted – быть оснащенным;

Sidelights – габаритные фонари;

Headlights – фары;

Poor visibility – плохая видимость;

To turn – поворачивать;

Windscreen wipers and washers – стеклоочистители;

Horns – сигналы;

Central locking – централизованное закрывание дверей;

To achieve – достигать;

Acceptable emission level – требуемый уровень выхлопных газов.

### **The motor car electrical /electronic equipment**

A modern motor car has a considerable number of electrical and electronic systems. It is fitted with certain lights, sidelights and headlights to be used in darkness and in poor visibility. Indicators, or flashers, are used to inform others of the direction in which a motor car is turning. Brake lights are required during the application of the brakes. There are a lot of other items which are operated electrically, such as windscreen wipers and washers, horns, heaters, audio systems, conditioning systems, central locking, etc.

The modern motor vehicle uses electronically controlled systems to operate many of the electrical items which were once controlled by simple on/off switches. Lately,

electronically controlled engine systems have become common to achieve good performance and acceptable emission levels.

To operate the motor car electrical and electronic equipment electrical power is needed. It comes from a generator which is driven from the engine. Since certain items may be needed when engine is not running, a battery or accumulator is fitted. The battery is charged by the generator when the engine is running.

**Task 12.** *Agree or disagree with the following statements and add some more information if needed.*

1. A motor car uses side lights and headlights only in darkness. 2. Brake lights are not required during the application of the brakes. 3. Windscreen wipers and washers are operated electrically. 4. Modern cars use electronically controlled systems to achieve acceptable emission levels. 5. A motor car is fitted with an accumulator.

**Task 13.** *Divide the following words or phrases into five groups, those which describe or belong to a) engine; b transmission; c) drive lines; d) steering system; e) body.*

Rear axle, capacity, clutch, pulling power, propeller shaft, wheels, springs, suspension, shock absorber, half-shafts, integral arrangement, gearbox, differentials, linkages, stiff light construction, main shaft, frame, front axles, wheel steering, diesel, brake steering, internal combustion, petrol, fuel consumption, gasoline, rear-wheel drive.

**Task 14.** *Match each word with its correct definition*

*Clutch, gearbox, axle, suspension, transmission*

1. The part of the vehicle that takes power from engine to the wheels.
2. A metal box that contains the gears of the vehicle.
3. A piece of equipment in a vehicle that you press with your foot when you change gear.
4. The equipment that makes a vehicle move smoothly when it goes over bumps on the ground.
5. A metal bar that connects a pair of wheels on a car or other vehicle.

**Task 15.** *Read the sentences, point out the Subjunctive Mood, the modal verbs and their equivalents. Give the Russian equivalents.*

1. They have to provide the necessary tools. 2. This structure should to fulfil a number of requirements. 3. The structure must contain all the systems and components. 4. They are able to arrange all the components. 5. The suspension system is to keep the vehicle occupants comfortable. 6. Being rather stiff the frameless or integral arrangement can withstand various frame stresses. 7. The four-wheel drive is to reduce the risks. 8. I wish we were isolated from road bumps of wheel spin. 9. It would be desirable to install a diesel in this vehicle. 10. The front-wheel drive is designed to be rather compact.

**Task 16.** *Make up your own sentences according to the models.*

**Model A:** *He can drive this motor car. He must drive this motor car.*  
*He is able to drive this motor car. He has to drive this motor car.*

1. He can arrange these components.
2. He can provide the proper model design.
3. He must provide the proper model design.
4. The four-wheel drive arrangement must distribute the drive to all four wheels.
5. She must handle the vehicle very carefully.

**Model B:** *This motor car hasn't a petrol engine.*  
*I wish this car had a petrol engine.*

1. This vehicle hasn't a diesel.
2. This car hasn't sufficient space for a driver and passengers.
3. This motor car hasn't a four-wheel drive layout.
4. This automobile hasn't a good suspension system.
5. This vehicle hasn't a stiff light construction.

**Task 17.** *Ask questions and use the words in Italics in your answers. The words in brackets will help you.*

1. A motor car contains the following components: *engine, chassis, and body* (what components).
2. The power of the engine is transmitted *through the transmission and drive lines* to the wheels (how).
3. The usual source of power for a motor car is *internal combustion engine* (what).
4. A large capacity diesel should fulfil the following requirements: *an ability to produce high levels of pulling power, reliability, and low fuel consumption* (what requirements).
5. *Spacing out the main components* in the rear-wheel drive layout makes each unit accessible (what).

**Task 18.** *Translate the following sentences from Russian into English.*

1. Главные структурные компоненты автомобиля: двигатель, шасси и кузов.
2. Источник энергии для автомобиля – двигатель внутреннего сгорания.
3. Шасси состоит из трансмиссии, ходовой части и системы управления.
4. Трансмиссия включает сцепление, коробку передач, карданную передачу, главную передачу и приводные валы или полуоси.
5. Ходовая часть вмещает раму, передний и задний мосты, подвеску, колеса.
6. Энергия двигателя передается через трансмиссию и ходовую часть к ведущим колесам.
7. Системы управления состоят из рулевого управления и тормозной системы.
8. Большинство современных автомобилей сконструированы с несущим кузовом.

**Task 19.** *Make a summary of the text using the following phrases:*

1. The title of the text is.....
2. The text is about ..... The text deals with.....
3. The text covers such points as.....first....second.....third.....
4. It should be underlined that.....
5. In conclusion, I may say that .....
6. To my mind.... In my opinion.....

### **Types of motor car body**

The main purpose of a motor car body is to provide comfortable accommodation for a driver and passengers. With the introduction of unitary constructions, the body has become the main structure onto which all other vehicle elements are attached. Therefore, the body is both a load-bearing structure and a comfortable location for the occupants. One can distinguish between some body types of a motor car, such as saloon, estate, hatchback, coupe, convertible, etc.

Saloon is a fully enclosed body with either two or four passenger doors. The common shape of the saloon body is based on three “boxes”: the front box forms the engine compartment, the centre section is the container for the occupants and the rear box is a storage space, called a boot (trunk) for the luggage.

Estate (station wagon) has the roofline extended to the rear of the body to enlarge floor area for the carriage of luggage or goods. The rear door enables bulky or long objects to be loaded easily. Stronger suspension springs are fitted in the rear to support the extra load.

The hatchback design is usually based on a saloon body but with the boot or trunk area blended into the centre section of the body therefore the hatchback is halfway between a saloon and an estate car.

Coupe is usually two-door type intended for two people: a driver and one passenger. Some coupe models are designed ‘2+2’ but the back area is more suitable for children or for occasional adult use.

Convertible, also called cabriolet or drop-head-coupe, can be changed into an open car by either removing a rigid roof or lowering a collapsible fabric roof.

The majority of mass-produced cars have a pressed steel body, although aluminium bodies are being used increasingly due to their lighter weight. Another common practice is to mould body panels from GRP (glass-reinforced plastics, often referred to as fiberglass). Other materials are also now used, such as carbon fibre, to produce body panels and structures.

## **Unit IV. ENGINES**

**Task 1.** *Read and translate the text, try to focus on its essential facts and choose the most suitable heading given below for each paragraph.*

- 1) Engine Classification According to the Types of Ignition, Engine Cycle, Valve Location, Cooling
- 2) Reciprocating Engines
- 3) Identification of a Given Engine
- 4) Rotary Engines
- 5) Spark-Ignition Engines
- 6) Invention and Development of the internal Combustion Engine
- 7) Compression-Ignition Engines
- 8) Different Kinds of Fuel Used in Engines

### **An Internal Combustion Engine**

An internal combustion (IC) engine is an engine in which combustion of the fuel takes place in a confined space, so that expanding gases provide mechanical power and produce motion. The invention and development of the internal combustion engine in the 19<sup>th</sup> century had a profound impact on human life. The first commercially successful internal combustion engine was created by a Frenchman, Etienne Lenoir in 1860. It ran on coal gas, but worked on a cycle of operations, which did not include compression of the gas before ignition: as a result, it was not very efficient. Although various forms of internal combustion engines had been developed before the 19<sup>th</sup> century, their widespread adoption in a variety of applications began with the commercial drilling and production of petroleum. Generally using fossil fuel (mainly petroleum), these engines appeared in almost all vehicles in the late 19<sup>th</sup> century. The most significant distinction between modern internal combustion engines and the early designs is the use of compression and, in particular, in cylinder compression.

Modern internal combustion engines can be classified in a number of different ways. According to the type of ignition, they can be divided into spark-ignition (SI) and compression-ignition (CI) engines. Depending on the engine cycle, they are four-stroke cycle and two-stroke cycle ones. A four-stroke cycle engine has four piston movements over two engine revolutions for each cycle. A two-stroke cycle engine has two piston movements over the revolution for each cycle. In accordance with the valve location, the internal combustion engines are called I-head engines if valves are in head (overhead valve), and L-head engines if valves are in block (flat head). According to the type of cooling, engines can be classified as air-cooled engines and liquid-cooled engines (water-cooled engines).

Basic design divides engines into reciprocating and rotary ones. A reciprocating engine has one or more cylinders in which pistons reciprocate back and forth. The combustion chamber is located in the closed end of each cylinder. Power is delivered to a rotating output crankshaft by mechanical linkage with the pistons. Reciprocating engines are classified on the base of position and number of cylinders. These are single-cylinder

engine, in-line engine, V-type engine, opposed-piston engine, and radial engine. A single-cylinder engine has one cylinder and piston connected to the crankshaft. In-line engine cylinders are positioned in a straight line, one behind the other along the length of the crankshaft. In V-type engine, two banks of cylinders are at an angle with each other along a single crankshaft. In V-type engine, two banks of cylinders are at an angle with each other along a single crankshaft, allowing for a shorter engine block. Opposed-cylinder engine has two banks of cylinders opposite to each other on a single crankshaft. These engines are often called flat engines. Engines of two different cylinder arrangements have been classified as W-type engines in the technical literature. An opposed-piston engine has two pistons in each cylinder with the combustion chamber in the centre between the pistons. Radial engines are engines with pistons positioned in a circular plane around a circular crankshaft. The connecting rods of the pistons are connected to a master rod, which in turn, is connected to the crankshaft.

A rotary engine is made of a large non-concentric rotor with a built-in gearwheel, moving around a stationary block (stator). The moving combustion chambers are formed by the corners of the rotor sliding against the inner surface of the non-rotating block (housing). A number of experimental engines have been tested using this concept, but the only design that has ever become common in an automobile is the Wankel engine which has one, two, and three rotors.

By method of fuel input, spark-ignition engines are divided into four types: carbureted engines in which air and fuel are mixed to facilitate the combustion process; multipoint port fuel injection engines in which one or more injections at each cylinder intake; throttle body fuel injection engines in which injectors upstream in intake manifold; gasoline direct injection engines in which injectors are mounted in combustion chambers with injection directly into cylinders.

By method of fuel input, compression-ignition engines are divided into three types: direct injection engines in which fuel is injected into the main combustion chamber; indirect injection engines in which fuel is injected into the secondary combustion chamber; homogeneous charge compression ignition engines in which well-mixed fuel and oxidizer (typically, air) are compressed to the point of auto-ignition.

Besides, different kinds of fuel are used in engines: diesel oil, motor oil, naphta; kerosene or benzol-oil mixtures; gas, natural gas methane; alcohol ethyl, methyl; dual fuel. There are several engines that use a combination of two or more fuels.

Several or all of these classifications can be used at the same time to identify a given engine. Thus, a modern engine might be called a reciprocating, spark-ignition, four-stroke cycle, I-head, water-cooled, gasoline, multipoint port fuel injection automobile engine.

**Task 2.** *Agree or disagree with the following statements.*

1. The first commercially successful internal combustion engine was very efficient.
2. The most significant distinction between modern internal combustion engines and the early designs is the use of compression and, in particular, in-cylinder compression.
3. Depending on the engine cycle, engines are four-stroke cycle and five-stroke cycle ones.

4. In accordance with the valve location, the internal combustion engines are called I-head engines if valves are in head (overhead valve), and L-head engines if valves are in block (flat head).
5. Radial engines are often called flat engines.

**Task 3.** *Read, transcribe and translate the international words, mind the stress.*

Mechanical \_\_\_\_\_  
 gas \_\_\_\_\_  
 commercial \_\_\_\_\_  
 compression \_\_\_\_\_  
 transport \_\_\_\_\_  
 automobile \_\_\_\_\_  
 mixture \_\_\_\_\_  
 modern \_\_\_\_\_  
 cylinder \_\_\_\_\_  
 technical \_\_\_\_\_  
 petroleum \_\_\_\_\_  
 location \_\_\_\_\_  
 cycle \_\_\_\_\_  
 engineering \_\_\_\_\_  
 concept \_\_\_\_\_  
 injection \_\_\_\_\_  
 method \_\_\_\_\_

**Task 4.** *Analyze the following words with different suffixes and divide them into two groups – nouns and adjectives.*

Internal, combustion, development, successful, efficient, commercial, mixture, different, ignition, distinction, mechanical, injector, classification, motion, invention, operation, compression, production, application, significant, different.

**Task 5.** *Divide the following terms into two groups, those which belong to a) spark-ignition engines; b) compression-ignition engines.*

Gasoline direct injection engines, homogeneous charge compression-ignition engines, multipoint port fuel injection engines, throttle body fuel injection engines, indirect injection engines, carbureted engines, direct injection engines.

**Task 6.** *Match each word with its correct definition.*

***Rotary engine, radial engine, in-line engine, W-type engine***

1. This engine is made of a block (stator) built around a large non-concentric rotor and crankshaft.
2. Cylinders are positioned in a straight line, one behind the other along the length of the crankshaft in this engine.

3. Pistons are positioned in a circular plane around a circular crankshaft in this engine.
4. Air and fuel are mixed to facilitate the combustion process in this engine.
5. This is an engine of two different cylinder arrangements.

**Task 7.** *Read and translate the text.*

### **Petrol cars and electrical cars.**

People have been using cars for ages. Nowadays, the main competition seems to be between petrol cars and electric cars. The main difference between these two cars is the technology that powers the cars to run. Petrol driven cars are built using internal combustion engines that use petrol as fuel, whereas electric cars run on battery power that is recharged.

A petrol combustion engine works on the principle of combustion, or the mixing of fuel with air to release gasses that cause the vehicle parts to move. The heat energy produced inside the engine is transmitted to propel the outside mechanical parts. These parts transmit the movement across the chassis to finally move the wheels accordingly. Petrol cars used to be fitted with carburetors and now use fuel injection systems. An electric car is fitted with batteries that rechargeable. The batteries are placed across the entire system in a balanced way to manage equivalent weight dispersion and are connected with cables. These batteries power the mechanical parts to move.

Both petrol and electric technologies work on different principles. However, certain important comparisons can be made in terms of the rate of conversion between a petrol engine and electric batteries which shows higher efficiency in the case of electric batteries. Moreover, the petrol combustion process produces a lot of smoke and dust, while electric batteries do not produce such pollutants. The energy transmission is better in electric battery driven vehicles when compared with petrol vehicles resulting lesser wastage and transmission loss.

Electric battery car technology is still being developed by the engineers. Though people argue in favour or against electric cars, the emerging situation demands to move away from petrol cars. More and more research and process improvements should be done to bring advancements in the technology. It can help people to save the environment from pollution.

**Task 8.** *Find the equivalents of these words in the text.*

1. Приводить в движение внешние механические части  
\_\_\_\_\_
2. вся система \_\_\_\_\_
3. распределение веса \_\_\_\_\_
4. загрязняющее вещество \_\_\_\_\_
5. высказывать аргументы за и против  
\_\_\_\_\_
6. износ \_\_\_\_\_
7. двигатели внутреннего сгорания  
\_\_\_\_\_

8. бензиновый двигатель		
9. системы	топливного	зажигания
10. процесс	бензинового	сгорания

**Task 9.** Agree or disagree with the following statements .

1. Petrol cars are better than electric cars.
2. Both the petrol and electric technologies work on the same principles.
3. The petrol combustion process produces a lot of smoke and dust, while electric batteries do not produce such pollutants.
4. Petrol cars should be completely replaced with electric cars.
5. Petrol cars have more disadvantages in comparison with electric cars/

**Task 10.** Fill in the table.

<i>Noun</i>	<i>Verb</i>
conversion	
	to produce
transmission	
	to develop
movement	
	to connect
connection	
	to expand
exploration	
	to combine

**Task 11.** Tick (✓) the sentences which are true.

1	Different internal-combustion engines are created by engineers.	
2	A petrol engine has traditionally been used in light passenger vehicles.	
3	The power of engine is being transmitted through transmission and drive lines to the drive wheels.	
4	Most modern cars are built with the integral chassis frame and body.	
5	The internal-combustion engines are used in automobiles, locomotives, marines, aircrafts, and others.	

**Task 12.** Make up your own sentences with the Passive Voice according to the model.

**Model:** In the 19<sup>th</sup> century engineers developed various forms of internal combustion engines. In the 19<sup>th</sup> century various forms of internal combustion engines were developed by engineers.

1. Etienne Lenoir created the first internal combustion engine in 1860.
2. Designers use engines in automobiles, locomotives, submarines, aircrafts, and others.
3. We usually use gasoline, diesel oil or fuel oil in automobiles.
4. A single combustion process causes two power strokes at the same time.
5. The scientists have classified engines of two different cylinder arrangements as W-type engines.

**Task 13.** Fill in the blanks to streamline the use of the Passive Voice. The words in brackets are given to help you.

1. Yesterday this letter .... to our British partners (to send).
2. The engines of a new type.... at Russian automobile plants next year (to produce).
3. This type of engine ... for new model of the car recently (to test).
4. Every year the modern designs of the automobiles .... by the engineers and scientists at the international conferences (to discuss).
5. Such common fuel as gasohol consisting of 90%gasoline and 10% alcohol also .... in IC engines (use).

**Task 14.** Make up sentences according to the model to practice the use of the Passive Voice.

**Model:** Современные двигатели внутреннего сгорания классифицируются по различным параметрам.  
*Modern internal combustion engines are classified in a number of different types.*

1. В двигателе карбюраторного типа сжатия топливовоздушная смесь поступает в цилиндры и поджигается системой зажигания.
2. В технической литературе современный двигатель называют бензиновым двигателем, четырехтактным двигателем, поршневым двигателем, двигателем с турбонагревателем, двигателем с искровым зажиганием, двигателем с V-образным расположением цилиндров, двигателем с верхним расположением клапанов, двигателем с водяным охлаждением, двигателем с распределенным впрыском топлива.
3. В двигателях с непрямым впрыском топливо впрыскивается в отдельную дополнительную камеру сгорания.
4. В бензиновых двигателях с прямым впрыском топлива форсунки расположены в камерах сгорания и топливо впрыскивается непосредственно в цилиндры.
5. В двигателях с распределенным впрыском топлива топливо попадает в каждый цилиндр через впускные клапаны.

**Task 15.** Ask questions and use the words in italics in your answers. The first words will help you.

1. The first internal combustion engine ran on *coal gas*.

What fuel \_\_\_\_\_?

2. *Etienne Lenoir* created the first commercially successful internal combustion engine.

Who \_\_\_\_\_?

3. A four-stroke cycle engine involves *four* piston movements over two engine revolutions for each cycle.

How many \_\_\_\_\_?

4. *Power* is delivered to a rotating output crankshaft by mechanical linkage with the pistons.

What \_\_\_\_\_?

5. Oppose-cylinder engines are often called *flat engines*.

How \_\_\_\_\_?

**Task 16.** Make a summary of the text using the following phrases.

1. The title of the text is.....
2. The text is about..... The text deals with ....
3. The text covers such points as....first.....second.....third.....
4. It should be underlined that.....
5. In conclusion, I may say that.....
6. To my mind..... In my opinion.....

### **The Wankel Engine**

The most successful rotary engine is the Wankel engine. German engineer Felix Wankel first conceived his rotary engine in 1924 and finally received a patent for it in 1929. He worked through the 1940s to improve the design. Considerable effort went into designing rotary engines in the 1950s and 1960s. They were of particular interest because they were running smoothly and quietly, and because of the reliability resulting from their simplicity. The Company NSU, where Wankel worked at that time, then licensed the concept to companies around the world, which continued to improve the design. Among the manufacturers signing licensing the agreements to develop Wankel engines were the automobile companies of Europe, America, Japan, Russia, and other countries.

The Wankel engine is a type of an internal combustion engine in which the four strokes of a typical Otto cycle occur in the space between a three-sided symmetric rotor and the inside of a housing. Its four-stroke cycle is generally generated in a space between the inside of an oval-like epitrochoid-shaped housing and a roughly triangular rotor. In the basic single-rotor Wankel engine, the oval-like epitrochoid-shaped housing surrounds a rotor which is triangular with bow-shaped flanks. It has a disk that looks like a triangle with bulging sides rotating inside a cylinder shaped like a figure eight with a thick waist. Intake and exhaust are through ports in the flat sides of the cylinder. The spaces between the sides of the disk and the walls of the cylinder form combustion pockets. During a single rotation of the disk, each pocket alternately grows smaller, then larger because of

the contoured outline of the cylinder. This provides compression and expansion. The engine runs on a four-stroke cycle. The expansion phase of the Wankel cycle is much longer than that of the Otto cycle.

The Wankel engines have some advantages. They are considered to be simpler and contain far fewer moving parts. For instance, they have no valves or complex valve trains. Moreover, since the rotor is geared directly to the output shaft, there is no need for connecting rods, a conventional crankshaft, crankshaft balance weights, etc. The elimination of these parts makes a Wankel engine not only much lighter, but it also completely eliminates the reciprocating mass of a piston engine with its internal strain and inherent vibration due to repeated acceleration and deceleration, producing not only a smoother flow of power but also the ability to produce more power by running at higher rpm. Though the Wankel engine has about 50% fewer parts and about a third the bulk and weight of a reciprocating engine, its main advantage is that advanced pollution control devices are easier to design for it than for the conventional piston engine. Besides, higher engine speeds are made possible by rotating instead of reciprocating motion, but this advantage is partially offset by the lack of torque at low speeds, leading to greater fuel consumption. Moreover, the shape of the Wankel combustion chamber and the turbulence induced by the moving rotor prevent localized hot spots from forming, thereby allowing the use of fuel of very low octane number without preignition or detonation, a particular advantage for hydrogen cars. The simplicity of design and smaller size of the Wankel engine also allows for savings in construction costs, compared to piston engines of comparable power output.

The Wankel engine has also some disadvantages. The design of the Wankel engine requires numerous sliding seals and a housing that is typically built as a sandwich of cast iron and aluminum pieces that expand and contract by different degrees when exposed to heating and cooling cycles in use. These elements led to a very high incidence of loss of sealing, both between the rotor and the housing and also between the various pieces making up the housing. Besides, the shape of the Wankel combustion chamber prevents preignition, it also leads to incomplete combustion of the air-fuel charge, with the remaining unburned hydrocarbons released into the exhaust. One more disadvantage of the Wankel engine is the difficulty of expanding the engine to more than two rotors. The complex shapes of the rotor, housing, and output shaft and the way they fit together requires that engines with more than two rotors use an output shaft made of several sections assembled during the assembly of the rest of the engine. While this technique has been used successfully in Wankel powered racing cars, it negates a great deal of the relative simplicity and lower cost of the Wankel engine construction.

Because of their compact, lightweight design, Wankel rotary engines have been installed in a variety of vehicles and devices such as automobiles and racing cars, aircraft, go-karts, personal water craft, and auxillary power units. The simplicity of the Wankel makes it ideal for macro, mini, micro, and micromini engine designs.

**Task 17.** Fill in the table.

<i>Infinitive</i>	<i>Past Indefinite</i>	<i>Participle II</i>	<i>Participle I</i>
	decided		
to build			

		drawn	
to be			
			doing
	saw		
to open			
		begun	
to grow			
	wanted		
to lit			
			stopping

**Task 18.** Read and translate the text.

### **The first trams.**

The very first tram was on the Swansea and Mumbles Railway in south Wales, UK; it was horse-drawn at first, and later moved by steam and electric power. The Mumbles Railway Act was passed by the British Parliament in 1804, and the first passenger railway (similar to streetcars in the US some 30 years later) started operating in 1807. The first streetcars, also known as horse cars in North America, were built in the United States and developed from city stagecoach lines and omnibus lines that picked up and dropped off passengers on a regular route without the need to be pre-hired. These trams were an animal railway, usually using teams of horses and sometimes mules to haul the cars, usually two as a team. Occasionally other animals were put to use, or humans in emergencies.

The first streetcar line, developed by Irish-American John Stephenson, was the New York and Harlem Railroad's Fourth Avenue Line which ran along the Bowery and Fourth Avenue in New York City. Service began in 1832. It was followed in 1835 by New Orleans, Louisiana, which has the oldest continuously operating street railway system in the world, according to the American Society of Mechanical Engineers.

The first electric street tramway in Britain, the Blackpool Tramway, was opened on 29 September 1885 using conduit collection along Blackpool Promenade. Since the closure of the Glasgow Corporation Tramways 1962, this has been the only first-generation operational tramway in the UK.

**Task 19.** Write down all the numerals and dates from the text by words.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_

**Task 20.** Find English equivalents in the text.

1. южный Уэльс \_\_\_\_\_
2. запряженная лошадьми \_\_\_\_\_
3. паровая и электрическая тяга \_\_\_\_\_
4. начала существование \_\_\_\_\_
5. постоянный маршрут \_\_\_\_\_
6. тащить за собой машину (вагон) \_\_\_\_\_
7. протянуться вдоль \_\_\_\_\_

**Task 21.** Complete the sentences from the text.

1. The very first tram was \_\_\_\_\_ at first, and later moved by \_\_\_\_\_.
2. The first streetcars were built \_\_\_\_\_ and also known as \_\_\_\_\_.
3. Stagecoach lines and omnibus lines were \_\_\_\_\_, usually using teams of \_\_\_\_\_ to haul \_\_\_\_\_.
4. According to the \_\_\_\_\_ New Orleans, Louisiana have the \_\_\_\_\_ in the world.
5. Since 1962 the \_\_\_\_\_ Tramway has been the only \_\_\_\_\_.

**Task 22.** Define Tense form of verbs.

1. was passed
2. started
3. were built
4. was followed
5. has
6. has been
7. was opened

**Task 23.** Make up a few questions on the topic.

**Task 24.** Write a report on first trams in Irkutsk.

**Task 25.** Read and translate the statements, then point out advantages and disadvantages of using trams.

### Pros and cons of tram systems.

1	Unlike buses, trams give off no exhaust emissions at point of use. Compared to motorbuses the noise of trams is generally perceived to be less disturbing. However, the use of solid axles with wheels fixed to them produces a characteristic loud, high frequency noise often referred to as a "squeal."	
2	Trams can cause speed reduction for other transport modes (buses, cars)	

	when stops in the middle of the road do not have pedestrian refuges, as in such configurations other traffic cannot pass whilst passengers alight or board the tram.	
3	The trams' stops in the street are easily accessible	
4	They can use overhead wire set to be shared with trolleybuses (a three wire system).	
5	Tram infrastructure occupies urban space at ground-level, sometimes to the exclusion of other users, including cars.	
6	The opening of new tram and light rail systems has sometimes been accompanied by a marked increase in car accidents, as a result of drivers' unfamiliarity with the physics and geometry of trams.	
7	Trams can adapt to the number of passengers by adding more cars during rush hour (and removing them during off-peak hours). No additional driver is then required for the trip in comparison to buses.	
8	The capital cost is higher than for buses, even if a tramcar usually has a much higher lifetime than a bus.	
9	Trams can run on renewable electricity without the need for very expensive and short life batteries.	
10	In the event of a breakdown or accident, or even road works and maintenance, a whole section of the tram network can be blocked.	
11	Passenger comfort is normally superior to buses because of controlled acceleration and braking and curve easement. Rail transport such as used by trams provides a smoother ride than road use by buses.	
12	Because the tracks are visible, it is easy for potential riders to know where the routes are.	
13	Light rail vehicles are often heavier per passenger carried than heavy rail and monorail cars, as they are designed with higher durability (which means more mass) to survive collisions, since they cannot swerve to avoid oncoming objects in emergencies.	

## TEST 1

- |   |     |       |
|---|-----|-------|
| <p>1) A structure of a vehicle provides a _____ for all necessary vehicle systems.<br/> a) location;      b) number;      c) purpose;</p>                               | 1.  | _____ |
| <p>2) A motor car includes engine, chassis, and _____.<br/> a) suspension;      b) body;      c) diesel;</p>  | 2.  | _____ |
| <p>3) Transmission embraces _____, gearbox, propeller shaft, etc.<br/> a) frame;      b) brakes;      c) clutch;</p>  | 3.  | _____ |
| <p>4) _____ systems are wheel steering and brake steering.<br/> a) Main;      b) Major;      c) Sufficient;</p>   | 4.  | _____ |
| <p>5) Drive lines include _____ front and rear axles, etc..<br/> a) frame;      b) gearbox;      c) clutch;</p>   | 5.  | _____ |
| <p>6) Suspension involves _____, shock absorbers, and linkage.<br/> a) propeller shaft;      b) springs;      c) capacity;</p>  | 6.  | _____ |
| <p>7) For the RWD _____, the rear wheels act as the driving wheels.<br/> a) space;      b) linkage;      c) layout;</p>   | 7.  | _____ |
| <p>8) In the _____ layout each unit is accessible.<br/> a) RWD;      b) FWD;      c) 4WD;</p>   | 8.  | _____ |
| <p>9) Relatively light vehicle systems and components are located in a lightweight _____ construction.<br/> a) sufficient;      b) unitary;      c) usual;</p>          | 9.  | _____ |
| <p>10) The frameless arrangement provides a _____ light construction to the motor car.<br/> a) isolated;      b) driving;      c) stiff;</p>                            | 10. | _____ |
| <p>11) The power of the engine _____ through the transmission and drive lines.<br/> a) is to be transmitted;      b) are to be transmitted;<br/> c) is to transmit;</p> | 11. | _____ |
| <p>12) The main purpose of a motor car _____ comfortable accommodation for occupants<br/> a) is to be provided;      b) provided;      c) is to provide;</p>            | 12. | _____ |

## TEST 2

- |   |                  |
|---|------------------|
| <p>1. An internal combustion (IC) engine is an engine in which ____ of the fuel takes place in a confined space.</p> <p>a) melting            b) combustion            c) cutting</p>   | <p>1.-----</p>   |
| <p>2. The first internal combustion engine ran on _____, but worked on a cycle of operations, which did not include compression of the gas before ignition.</p> <p>a) natural gas        b) petrol            c) coal gas</p> | <p>2.-----</p>   |
| <p>3. The most significant distinction between modern internal combustion engines and the early designs is the use of _____.</p> <p>a) pressure        b) ignition            c) compression</p>                              | <p>3-----</p>    |
| <p>4. A reciprocating engine has one or more cylinders in which pistons reciprocate _____.</p> <p>a) up and down        b) back and forth    c) left and right</p>  | <p>4-----</p>    |
| <p>5. Basic design divides engines into reciprocating and _____ ones.</p> <p>a) royal            b) round            c) rotary</p>  | <p>5-----</p>    |
| <p>6. Reciprocating engines are classified on the base of position and number of _____.</p> <p>a) pistons        b) cylinders        c) crankshafts</p>   | <p>6-----</p>    |
| <p>7. A single-cylinder engine has one cylinder and piston connected to the _____.</p> <p>a) crankshaft    b) combustion chamber    c) rotor</p>  | <p>7-----</p>    |
| <p>8. Opposed- cylinder engine has _____- banks of cylinders opposite to each other on a single crankshaft.</p> <p>a) two            b) three            c) four</p>  | <p>8-----</p>    |
| <p>9. An opposed-piston engine has _____ pistons in each cylinder with the combustion chamber in the centre between the pistons.</p> <p>a) two            b) three            c) four</p>                                     | <p>9-----</p>    |
| <p>10. A rotary engine is made of a large non-concentric rotor with a built-in _____, moving around a stationary block (stator).</p> <p>a) cylinder        b) crankshaft        c) gearwheel</p>                              | <p>10-----</p>   |
| <p>11. The first commercially successful internal combustion engine _____ by a Frenchman, Etienne Lenoir in 1860.</p> <p>a) is created        b) was created        c) are created</p>  | <p>11.-----</p>  |
| <p>12. The combustion chamber _____ in the closed end of each cylinder.</p> <p>a) am located        b) are located        c) is located</p>   | <p>12-----</p>   |
| <p>13. Power _____ to a rotating output crankshaft by mechanical linkage with the pistons in reciprocating engine.</p> <p>a) am delivered    b) is delivered        c) are delivered</p>                                      | <p>13_____ -</p> |

## Grammar tables.

### *to be* *Simple Active*

Present	Past	Future
(I) am (he, she, it) is (we, you, they) are	was (ед. ч.) were (мн. ч.)	shall be (1-е л.) will be

### *to have* *Simple Active*

Present	Past	Future
have (got) has (got)	had	shall have will have

### *Сводная таблица модальных глаголов и их эквивалентов*

	Present	Past	Future
Долженствов ание	I must meet him.		
	I have to meet him.	I <b>had</b> to meet him.	I <b>shall have to</b> meet him.
	I am to meet him.	I <b>was</b> to meet him.	I'll be to meet him.
	I <b>should</b> meet him.		
Способность или возможность совершения действия	He <b>can</b> help you.	He <b>could</b> help you.	
	He is able to help you.	He was able to help you.	He <b>will be able to</b> help you.
Разрешение или возможность	I may use this device.	I might use this device	
	I am allowed to use the device.	I was allowed to use the device.	I <b>shall be allowed to</b> use the device.

### *Simple Active Tenses*

Форма	Present Simple	Past Simple	Future Simple
Утвердительная	My friends study French. He speaks English.	My friends studied French at school. He <b>spoke</b> English at the conference.	My friends <b>will study</b> French at the Institute. The teacher <b>will speak</b> about our English exam.
Вопросительная	<b>Do</b> your friends study French?  <b>Does</b> he speak English?	<b>Did</b> your friends study French at school?  <b>Did</b> he speak English at the conference?	<b>Will</b> your friends study French at the Institute?  <b>Will</b> the teacher speak about our English exam?
Отрицательная	My friends <b>don't</b> study French. He <b>doesn't</b> speak English.	My friends <b>did not</b> study French. He <b>didn't</b> speak English at the conference.	My friends <b>won't study</b> French at the Institute. The teacher <b>won't speak</b> about our English exam.

### *Progressive Active Tenses*

Форма	Present Progressive	Past Progressive	Future Progressive
Утвердительная	The <b>are having</b> an English class.  He <b>is still writing</b> an exercise.	They <b>were having</b> an English class when I came to see them. He <b>was writing</b> an exercise from 6 till 8 o'clock.	They <b>will be having</b> an English class tomorrow at 9 o'clock.  He <b>will be writing</b> an exercise from 6 till 8 o'clock tomorrow.
Вопросительная	<b>Are</b> they <b>having</b> an English class?  <b>Is</b> he still <b>writing</b> an exercise?	<b>Were</b> they <b>having</b> an English class when I came to see them?  <b>Was</b> he <b>writing</b> an exercise from 6 till 8 o'clock.	<b>Will</b> they <b>be having</b> an English class tomorrow at 9 o'clock?  <b>Will</b> he <b>be writing</b> an exercise from 6 till 8 o'clock tomorrow?

<b>Отрицательная</b>	<b>They aren't having</b> an English class, they are having a Russian class.	<b>They weren't having</b> an English class when 1 came to see them, they were having a Russian <b>class</b> .	<b>They will not be having</b> an English class tomorrow at 9 o'clock, they will be having a Russian class.
	He <b>isn't writing</b> an exercise, he is reading a book.	<b>He wasn't writing</b> an exercise from 6 till 8 o'clock, he was reading a book.	He <b>won't be writing</b> an exercise from 6 till 8 o'clock tomorrow, he'll be reading a book.

### *Perfect Active Tenses*

Форма	Present Perfect	Past Perfect	Future Perfect
Утвердительная	I <b>have sent</b> the letter.	I <b>had</b> already <b>sent</b> the letter by 6 o'clock yesterday.	I <b>shall have sent</b> the letter by tomorrow evening.
Вопросительная	<b>Have</b> you <b>sent</b> the letter?	<b>Had</b> you <b>sent</b> the letter by 6 o'clock yesterday?	<b>Will</b> you <b>have sent</b> the letter by tomorrow evening?
Отрицательная	I <b>have not sent</b> the letter yet.	I <b>had not sent</b> the letter by 6 o'clock yesterday.	I <b>shall not have sent</b> the letter by tomorrow evening.

### *Simple, Progressive, Perfect Tenses in Passive Voice*

	Simple to be + Participle II	Progressive to be + being + Participle II	Perfect to have + been + Participle II
Present	The letter is translated	The letter is being translated	The letter has been translated
	Is the letter translated?	Is the letter being translated?	Has the letter been translated?
	The letter isn't translated	The letter isn't being translated	The letter hasn't been translated.
Past	The letter was translated	The letter was being translated	The letter had been translated

	Was the letter translated?  The letter wasn't translated.	Was the letter being translated?  The letter wasn't being translated	Had the letter been translated?  The letter hadn't been translated?
Future	The letter will be translated  Will the letter be translated?  The letter won't be translated	He употребляются.	The letter will have been  Will the letter have been translated?  The letter won't have been translated.

### **Структура специальных вопросов**

Вопросительные слова	Вспомогательный глагол	Подлежащее и определение к нему	Смысловой глагол в форме инфинитива	Другие члены предложения
What Where When	do did will	you he your sister	do go return	in the evening? yesterday? home?

### **Таблица производных слов от some, any, no, every**

Местоимения	+ thing	+body, one	+where	Употребление
some некоторый какой-то какой-нибудь несколько	something <i>что-то, что-нибудь</i>	somebody someone <i>кто-то кто-нибудь</i>	somewhere <i>где-то, куда-то, где-нибудь, куда-нибудь</i>	в утверд. . предл.
any 1) <i>всякий любой</i> 2) <i>какой-нибудь</i>	anything 1) <i>всё</i> 2) <i>что-то</i> 3) <i>что-нибудь</i>	anybody anyone 1) <i>всякий,</i> 2) <i>кто-то, кто-нибудь</i>	anywhere 1) <i>везде,</i> 2) <i>где-нибудь, куда-нибудь</i>	1) в утверд. 2) в вопросит, предл.
no, not any <i>никакой + не</i>	nothing (not anything) <i>ничто + не ничего</i>	nobody (not anybody), no one <i>никто + не</i>	nowhere not anywhere <i>нигде, нигде + не</i>	в отрицат. предл.

every <i>всякий, каждый</i>	everything <i>всё</i>	everybody everyone <i>все</i>	everywhere <i>езде, повсюду</i>	в утверд., вопросит, и отрицат. предл.
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### **Словообразовательные аффиксы**

<b>Существительные</b> - ion / - sion /-tion - er / -or -ing -ment -ty / -ity -ance / -ence -ness -ure / -ture	- discussion, transmission, combination - writer, inspector - opening - development - activity - importance, difference - darkness - mixture
<b>Прилагательные</b> -ic -ive -able / -ible -ant / -ent -ous -al -ful -less -un / -in / -ir / -il / -im	- democratic - progressive - valuable, accessible -resistant, different - dangerous - central - hopeful - hopeless - uncomfortable, indirect, irregular, illogical, impossible
<b>Глагол</b> -ize re-	- to characterize - to rewrite

## Irregular verbs.

<i>Infinitive</i>	<i>Past</i>	<i>Participle II</i>	<i>Translation</i>
arise	arose	arisen	возникать
awake	awoke	awaked	будить, проснуться
be	was, were	been	быть
bear	bore	born	носить, родить
beat	beat	beaten	бить
become	became	become	стать
begin	began	begun	начать
bend	bent	bent	согнуться
bind	bound	bound	связать
bite	bit	bitten	кусать
blow	blew	blown	дуть
break	broke	broken	ломать
bring	brought	brought	приносить
build	built	built	строить
burst	burst	burst	разразиться, взорваться
buy	bought	bought	покупать
catch	caught	caught	ловить, поймать
choose	chose	chosen	выбирать
cut	cut	cut	резать
deal	dealt	dealt	иметь дело
dream	dreamt	dreamt	мечтать
do	did	done	делать
draw	drew	drawn	тащить, рисовать
drink	drank	drunk	пить
drive	drove	driven	ехать
eat	ate	eaten	есть, кушать
hear	heard	heard	слушать
hit	hit	hit	ударить, попасть
hold	held	held	держать
hurt	hurt	hurt	причинять боль
know	knew	known	знать
keep	kept	kept	держать
lay	laid	laid	класть, положить
lead	laid	laid	вести
leap	leapt/leaped	leapt/leaped	прыгать
leave	left	left	оставлять
lend	lent	lent	одолжить
let	let	let	пустить, дать
lie	lay	lain	лежать
lose	lost	lost	терять
make	made	made	делать
meet	met	met	встречать

pay	paid	paid	платить
put	put	put	класть
read	read	read	читать
ride	rode	ridden	ездить верхом
ring	rang	rung	звонить
rise	rose	risen	поднимать
run	ran	run	бежать
say	said	said	говорить, сказать
see	saw	seen	видеть
sell	sold	sold	продавать
send	sent	sent	послать
set	set	set	устанавливать
shake	shook	shaken	трясти
shine	shone	shone	светить, сиять
shoot	shot	shot	стрелять
show	showed	shown/showed	показывать
sing	sang	sung	петь
sink	sank	sunk	опускаться
sit	sat	sat	сидеть
sleep	slept	slept	спать
slide	slid	slid	скользить
speak	spoke	spoken	говорить
spend	spent	spent	тратить
steal	stole	stolen	украсть
stick	stuck	stuck	втолкнуть
strike	struck	struck/stricken	ударять, бастовать
swear	swore	sworn	клясться
swim	swam	swum	плавать
take	took	taken	брать
teach	taught	taught	учить
tell	told	told	говорить
think	thought	thought	думать
throw	threw	thrown	бросить
wake	woke	woken	просыпаться, будить
wear	wore	worn	носить
weep	wept	wept	плакать
win	won	won	выигрывать
wind	wound	wound	заводить
write	wrote	written	писать

Основная литература:

Афанасьева О.В. Английский язык : 11 класс: базовый уровень / О.В.Афанасьева, И.В.Михеева, К.М.Баранова. – 8-е изд., стереотип. – М.: Просвещение, 2021. – 199, [1} с.: ил. – (Rainbow English) + ЭБС Znanium.com Договор № 5669 эбс от 10.01.2022 г.

Дополнительная литература:

Литвинская С.С. Английский язык для технических специальностей: учебное пособие / С.С.Литвинская. – Москва: ИНФРА-М, 2022 – 252 с. – (Среднее профессиональное образование)