

**Государственное автономное профессиональное образовательное учреждение
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Российской Федерации Е.В. Золотухина»**

Т.Е.Морозова

ИНОСТРАННЫЙ ЯЗЫК

**Методическое пособие для самостоятельной работы студентов специальностей
технического профиля очной и заочной форм обучения.**

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Разработала: Морозова Т.Е.

Рецензент: Русяйкина Г.Н.

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Введение

Данное методическое пособие предназначено для выполнения самостоятельной работы студентами технических специальностей очной и заочной форм обучения

Пособие представляет собой сборник текстов профессиональной направленности.

Студентам предложено 17 текстов, позволяющих ознакомиться с терминологией специальности. При самостоятельной работе обучающиеся выполняют следующие задания: прочитать и пересказать текст, ответить на вопросы по тексту, перевести профессиональные выражения с английского языка на русский язык, подобрать английские аналоги для русских слов и словосочетаний и др.

Работать с текстами можно как на самостоятельной работе во время урока, так и на внеурочной самостоятельной работе.

Пособие составлено в соответствии с ФГОС СПО, отражает современные тенденции и требования к обучению и практическому владению иностранными языками в профессиональной деятельности; направлено на совершенствование коммуникативных умений и навыков специалистов среднего звена, повышение качества профессионального образования и интеллектуализацию.

Составитель: Морозова Т.Е., преподаватель английского языка

TEXT 1

Exercise 1. *Read and translate the text*

We learn English.

It is very important to know foreign languages. Some people learn them for their work, others travel abroad, some people learn them as a hobby.

At our college we learn English. We need English for our future profession. We shall read articles in magazines and newspapers to know news in modern technology.

At our English lessons we read, translate texts, tell the topics, learn English grammar, do exercises.

This year we shall have to pass exam in English.

We are sure that English will help us in our future life and in our future professions. Besides knowledge of foreign languages helps us to develop friendship and understanding among people.

Exercise 2. *Answer the questions to the text*

1. It is important to know foreign languages?
2. Why do people learn foreign languages?
3. What languages do you learn at your college?
4. Why do you need English?
5. How will you use your English?
6. What do you do at English lessons?
7. What will you have to pass year?
8. What are you sure in?
9. What does knowledge help?
10. Who is your English teacher?

TEXT 2

INVENTORS

Exercise 1. *Read and translate the texts*

Orville and Wilbur Wright

The Wright brother invented, built, and flew the first airplane on December 7, 1903, at Kitty Hawk, North Carolina. They reported their flight in a letter to government officials in Washington, D. C., but such an achievement was considered impossible. Therefore, their letter was ignored. It was not until 1908 that the Wright brother gained worldwide fame.

You can see the Kitty Hawk Flyer on display at the Smithsonian Museum in Washington, D.C.

Henry Ford (1863-1947)

Henry Ford was born in 1863. He was a man who transformed the world. The car he built changed the lives of people everywhere. In 1896, Ford succeeded in building an automobile powered by a gasoline engine. He built this engine in his kitchen sink. In 1903, Henry Ford established the Ford Motor Company and introduced the Model T Ford.

Henry Ford wanted to make a car that everyone would be able to afford. He was able to lower the price of the Model T from \$850 to \$360 by introducing mass production assembly line

techniques. On an assembly line each person has one specific job and, therefore, can do it faster and more efficiently.

Alexander Graham Bell (1847-1922)

Alexander Graham Bell was born in Edinburgh, Scotland, in 1847. He invented the first telephone in 1876 and became a citizen of the United States in 1882.

Bell was a modest humanitarian who once told his family that he would rather be remembered as a teacher of the deaf than as the inventor of the telephone. Both in America, the inscription on Bell's grave reads: "Born in Edinburgh... died a citizen of the United States of America."

"I wonder what the world would be like today if the telephone hadn't been invented," Sasha thinks to himself.

New Words

1. official – должностное лицо, чиновник
2. to achieve – достигать
3. achievement – достижение
4. to ignore – игнорировать (не обратить внимание)
5. display – выставка
6. to transform – преобразовывать
7. powered – приводимый в движение
8. engine – двигатель, мотор; локомотив, паровоз
9. to introduce – вводить
10. to afford – позволить себе
11. to lower – снижаться
12. mass production assembly line technique – технология массового производства с использованием сборочного конвейера
13. efficiently – эффективно
14. modest – скромный
15. humanitarian – проводник гуманности
16. both...and... – как...так...
17. tribute – дань в честь
18. grave – могила.

Exercise 2. Answer the questions to the texts

1. Who transformed the world? How?
2. What are the Wright brothers famous for?
3. When did the Wright brothers gain worldwide fame?
4. How did Alexander Graham Bell want to be remembered?
5. Where is the Kitty Hawk Flyer on display?
6. Have you ever invented anything?
7. If you could interview one of these American inventors, who would you choose?
8. Talk about the inventors in your country.
9. What do you think the world would be like today if there were no cars, airplanes, or telephones?
10. If you could invent something, what would you invent?

TEXT 3

Exercise 1. Read and translate the text

RUBBER

We all know what rubber is. We have seen it on the wheels of cars; we have used it to rub out mistakes in drawing; we have played games with rubber balls. When we press a piece of rubber we change its shape. But as soon as we stop pressing, the rubber springs back to its first shape; we therefore say that rubber is elastic.

Rubber was first used to make rubber balls. In 1492, Columbus sailed from Spain and discovered America. One of the many strange things which he and his men saw in America was a game played with rubber balls. They noticed that the rubber balls bounced much better than the balls which they had used in their own country. When they sailed home again they told their friends that the balls were made from the gum of a tree.

Hundreds of years had passed before rubber was used in Europe and other parts of the world. Small pieces of rubber were brought to Europe, and kept by people who liked to collect strange things; but no one thought that rubber could be useful.

Then an artist found out that rubber would rub out pencil marks. That was one of the first uses of rubber, and that is how it came to be called 'rubber'.

Rubber trees grow only in countries where it is very hot and very damp. These countries are near the equator; so it was in the countries near the equator that men went out to hunt for the rubber trees. It was not easy to find the trees. In those hot damp lands, trees of many kinds grow so close together that it is difficult to travel through the forests.

The men who were hunting for rubber trees found them growing wild in South America, in Central America, and in West Africa. Nearly all the world's rubber came from the great forests of America and West Africa.

New Words

- | | |
|---|---------------------------------------|
| 1. Bounce – подпрыгивать | 13.mistake – ошибка |
| 2. Close - близко, рядом | 14.pause - пауза |
| 3. Cross - пересекать | 15.press – нажимать, пресс |
| 4. Discover - делать открытие | 16.rubber - резина; резинка |
| 5. Discovery - открытие | 17.rub out - стирать |
| 6. draw (drew, drawn) - рисовать, чертить | 18.shape - форма |
| 7. drawing - рисование, черчение | 19.sink (sank, sunk) - погружать(ся); |
| 8. equator - экватор | 20.топить; тонуть |
| 9. find out - узнавать | 21.spring back - зд. возвращаться |
| 10.gum – смола | 22.therefore - следовательно, поэтому |
| 11.hunt - охотиться; искать | 23.wheel - колесо |
| 12.hunter - охотник | |

Exercise 2 Arrange the words in the alphabetical order.

Rub,rubber,gum,hunt,wheel,shape,mistake,draw,close,drawing,engage,creative,irrigate.

Exercise 3 Read the text Rubber and find the answers to the questions:

- 1) What is rubber?
- 2) Where is rubber used?
- 3) What was the first use of rubber?
- 4) Where do rubber trees grow?

Exercise 4 *Read the text 'Rubber' and write out the sentences with the words in ing-forms. Underline the ing-form and state what part of speech it is (the Gerund or the Present Participle). Translate the sentences into Russian.*

Exercise 5 *The sentences are not true to fact. Correct them.*

For example: We can use rubber to draw.-That's wrong. We can use rubber to rub out mistakes in drawing

- 1) When we press a piece of rubber we can't change its shape because it is hard.
- 2) Rubber is not elastic.
- 3) Rubber was first made to make rubber wheels.
- 4) Columbus discovered America in 1592.
- 5) Columbus sailed from Great Britain.
- 6) Rubber was used in Europe and other parts of the world in the fifteenth century.
- 7) It is called 'rubber' because it is elastic.
- 8) Rubber trees can grow everywhere.
- 9) It is easy to find rubber trees.
- 10) Nearly all the world's rubber came from England and Europe.

TEXT 4

Exercise 1. *Read and translate the text*

Science and technology

What is Technology?

Technology means the use of people's inventions and discoveries to satisfy their needs.

Since people have appeared on the earth, they have had to get food, clothes, and shelter.

Through the ages, people have invented tools, machines and materials to make work easier. Nowadays, when people speak of technology, they mean industrial technology.

Industrial technology began about 200 years ago with the development of the steam engine, the growth of factories, and the mass production of goods. It influences different aspects of people's lives.

The development of car influenced where people lived and worked. Radio and television changed their leisure time. The building of machines influences greatly the process of work itself. Science has contributed much to modern technology.

Industrial technology depends on experience and science.

Exercise 2. *Answer the questions to the text*

1. What is technology?
2. What do people mean they speak of technology?
3. When did industrial technology begin?
4. How did the development of car, radio a TV influence people is life?
5. What does industrial technology depend on?

Exercise 3. *Give English equivalents to the Russian words and word combinations*

наука, технология, изобретения, открытия, использовать, потребности, удовлетворять, инструмент, станок, промышленный, развитие, паровой двигатель, производство товаров, влиять, изменять, досуг, вносить вклад в..., современный, зависеть от..., опыт.

Exercise 4. *Translate into English*

1. Наука означает знание.
2. Технология- это изобретения и открытия.
3. Изобретение парового двигателя явилось началом промышленной технологии.
4. Жизнь людей изменилась с развитием промышленной технологии.
5. Современная технология основана на науке.
6. Промышленная технология зависит от опыта и науки.
7. Люди изобретали инструменты, станки и различные материалы, чтобы облегчить свою работу.

Exercise 5. *Tell the text 2*

TEXT 5

Exercise 1. *Read and translate the text*

Scientific and Technological Progress

It's difficult to overestimate the role of science and technology in our life. They accelerate the development of civilization and help us in our cooperation with nature. Scientists investigate the laws of the universe, discover the secrets of nature, and apply their knowledge in practice improving the life of people.

Let's compare our life nowadays with the life of people at the beginning of the 20-th century. It has changed beyond recognition. Our ancestors hadn't the slightest idea of the trivial things created by the scientific progress that we use in our every day life. I mean refrigerators, TV sets, computers, microwave ovens, radiotelephones, what not. They would seem miracle to them that made our life easy, comfortable and pleasant. On the other hand, the great inventions of the beginning of the 20-th century, I mean radio, aeroplanes, combustion and jet engines have become usual things and we can't imagine our life without them.

A century is a long period for scientific and technological progress, as it's rather rapid. Millions of investigations, the endless number of outstanding discoveries have been made. Our century has had several names that were connected with a certain era in science and technology. At first it was called the atomic age due to the discovery of the splitting of the atom. Then it became the age of the conquest of space when for the first time in the history of mankind a man overcame the gravity and entered the Universe. And now we live in the information era when the computer network embraces the globe and connects not only the countries and space stations but a lot of people all over the world. All these things prove the power and the greatest progressive role of science in our life.

But every medal has its reverse. And the rapid scientific progress has aroused a number of problems that are a matter of our great concern. These are ecological problems, the safety of nuclear war threat, and the responsibility of a scientist.

But still we are grateful to the outstanding men of the past and the present who have courage and patience to disclose the secrets of the Universe.

New Words

1. overestimate v. - переоценивать
2. accelerate v. - ускорять
3. investigate v. - исследовать
4. Our ancestors hadn't the slightest ideal of... - У наших предков не было ни малейшего представления о...
5. trivial a. - обыденный
6. miracle n.- чудо
7. combustion engine - двигатель внутреннего сгорания
8. endless a.- бесконечный
9. embrace v. - охватывать
- 10 reverse n.- обратная сторона
- 11.arouse v.- вызывать
- 12.a matter of great concern - вопрос, вызывающий озабоченность
- 13.threat n. - угроза
- 14.responsibility n.- ответственность
- 15.patience n.- терпение
- 16.disclose v.- обнаруживать, раскрывать
- 17.universe n.- вселенная, мир
- 18.apply v.- применять, употреблять
- 19.jet engine - реактивный двигатель
- 20.rapid a.- быстрый, скорый
- 21.beyond recognition - до неузнаваемости
- 22.splitting n.- расщепление
- 23.conquest n.- покорение
- 24.gravity n.- сила тяжести, притяжения, гравитация
- 25.courage n.- смелость

Exercise 2. Answer the questions to the text

1. What is the role of science and technology in our life?
2. What things, which we use in our daily life, would seem miracles to our ancestors?
3. How have great inventions changed our life?
4. What is our century called? Why?
5. Why was it called the atomic age?
6. What problems has the rapid scientific progress aroused?
7. We are grateful to the great scientists and inventors, aren't we?

Exercise 3. Give English equivalents to the Russian words and word combinations

1. Трудно переоценивать роль науки и техники в нашей жизни.
2. Наши предки не имели ни малейшего представления об обыденных вещах, созданных прогрессом науки, которыми мы пользуемся каждый день.
3. Были проведены миллионы исследований и сделано бесконечное число выдающихся открытий.
4. Но у любой медали есть другая сторона.
5. И всё же мы благодарны великим учёным прошлого и настоящего, у которых есть мужество и терпение раскрывать секреты Вселенной.

Exercise 4. Fill in the gaps with the missing words from the text

1. Science and technology ... the development of civilization and help us in our ... with nature.
2. Trivial things created by the scientific progress would seem ... to our ancestors.
3. The great inventions made our life easy, ... and

4. A century is a long period for ... and ... progress, as it's rather
5. Now we live in the when the computer network ... the globe and ... not only the countries and space stations, but a lot of ... all over the world.
6. Rapid scientific progress has ... a number of problems that are a matter of our great

Exercise 5. Complete the following sentences with a suitable variant

1. Scientists investigate the laws of the Universe, discover the secrets of nature and then
 - a) write thick books improving the life of people.
 - b) invent different machines improving the life of people.
 - c) apply their knowledge in practice improving the life of people.
2. Our life nowadays, as compared with the life of people at the beginning of the 20th century,
 - a) has not changed at all.
 - b) has changed beyond recognition.
 - c) has become more pleasant and comfortable.
3. Our century has had several names that were connected with
 - a) a certain era in science and technology.
 - b) a certain era in art and music.
 - c) the development of the society.

Exercise 6. Read the text, try to focus on its essential facts and choose the most suitable heading for each paragraph

1. Things that make our life easy, comfortable and pleasant.
2. Every medal has its reverse.
3. The role of science and technology in our life.
4. The reason why the 20-th century has had several different names

Exercise 7 Using the facts from the text ,try to tell about :

1. Trivial things that make our life comfortable, but would seem miracles to our ancestors.
2. Why the 20-th century was called the atomic age, the age of the conquest of space and the information era.
3. The problems caused by the rapid scientific progress.

TEXT 6

Exercise 1. Read and translate the text

Means of transport

People use various means of transport to get from one place to another

In the old days people had to travel several days, weeks and months to get to the place they needed. They either went on foot, by coaches driven by horses or on horse back or by boats and ships. Then trains, trams, cars, buses, airplanes, underground and other means appeared

Many people like to travel by air as it is the fastest way of travelling. A lot of people like to travel by train because they can look at passing villages, forests, and fields through windows. Some people like to travel by car. There they can go as slowly or as fast as they like. They can stop when and where they want.

People who live in big cities use various means of transport to get from one place to another

Do you know what means of transport Londoners use?

Londoners use the underground railway. They call it 'the tube'.

London's underground is the oldest in the world. It was opened in 1863.

Londoners use buses. The first bus route was opened in London in 1904. Today there are hundreds of routes there. The interesting thing is that some of the routes are the same as many years ago. London's buses are double-decked buses.

Londoners do not use trams, though London was the first city where trams appeared. And now it is one of the biggest cities in the world where there are no trams. The last tram left the streets of London many years ago.

Londoners use cars. You can see a lot of cars in London streets.
When Londoners leave the town, they use trains, ships or airplanes.

Exercise 2. Answer the questions to the text

- 1) What do people use to get from one place to another?
- 2) Why do people have to travel so long to get to the place they needed in the old days?
- 3) Why do many people like to travel by air (by train, by car)?

Exercise 3. Read with the teacher and study the use of the new words.

way, ways; Which is the best way home? Can you find your way?

horse, on horseback; There are several beautiful horses on the farm.

boat, by boat; Can I get there by boat? You can see a lot of ships and boats on the Volga.

slow, slowly; Speak slowly (not so fast). You read too slowly, Oleg.

early; He came home early. It was early in the morning.

several, several boys, several books; 'Several' means 'more than two but not many'.

various, various books; We read various books.

appear, appeared; A ship appeared far away. The book appeared in the shop last month.

arrive, arrived; The train arrives in London at six.

decode, decoded; We decoded to stay at home.

direction, in the direction of; In which direction did he go? He went in the direction of the tower. The boys ran in every direction.

travel, travelled; He travels a lot. Oleg's grandfather travelled in many countries. I like the book 'Gulliver's Travels'.

about; Tell us about this film. This text is about a football match. He likes to read about great men. Igor is about as tall as I am.

enough; We have enough time to get there. That's enough.

tram, trams, go by tram, take a tram; You may take a tram to get there.

underground; The Moscow underground is the best in the world. The underground is the fastest means of transport in big cities.

turn, turned; He turned his head and looked back.

lose (lost), lose something, lose something, lose somebody; This old woman lost two sons in 1942. I lost my new pen yesterday. Where did you lose it?

through, through the garden; We can look at our school through the window.

forest, forests; We walk home through the forest. There is a nice forest near our village.

pass, passing, passing years, passing forests; Please, let me pass. We passed through several villages.

money; I have no money. Where is the money?

fallow, followed; Monday follows Sunday. Mike went first and Pete followed him; **following**; Read the following sentences.

same, the same; Read the same words. Answer the same question, Ann.

station, stations; It takes me ten minutes to get to the station.

tomorrow; Come to see us tomorrow morning.

Exercise 4. Read and choose the words denoting: 1) means of transport;

2) ways for means of transport. **Write them in two columns.**

Way, car, train, river, lorry, road, horse, underground, street, bicycle, boat, pavement, tram, ship, field, boat.

Exercise 5 Arrange the words in pairs of opposites.

Slow, open, right, fast, take, early, hot, to, give, left, from, late, shut, cold.

Exercise 6 Use the pairs of words in the sentences of your own.

For example: Pete turned left, and Mike turned right.

It was warm yesterday, and it is cold today.

Exercise 7 Arrange the words which are near in meaning.

For example: little, small

Big, several, beautiful, come, large, some, town, different, great, nice, appear, city, various.

Exercise 8 Guess the meaning of the following words.

For example: work-работать; worker-рабочий

travel- путешествовать; traveler- . . .

tell- рассказывать; teller- . . .

sleep- спать; sleeper- . . .

listen- слушать; listener- . . .

run- бегать; runner- . . .

Exercise 9 Give the three forms of the verbs.

Go, get, know, do, see, leave, lose, tell, say, speak, appear, follow, pass.

Exercise 10 Name the means of transport and say:

1) which is the slowest;

2) which is the fastest;

3) which people can use only in towns;

4) which people can use only in the country;

5) which people can use everywhere;

6) which you like best and why;

7) which you do not like and why;

8) which you often use;

9) which you never use;

10) which you used last time.

Exercise 11 Listen to dialogue and then pronounce it after the speaker.

DIALOGUE

A: Excuse me!

B: Yes?

A: Can you tell me how to get to the theatre?

B: Certainly.

A: What do you think is the best way to get there?

B: By underground, I think.

A: Is it the shortest way?

B: The fastest one.

Exercise 12 Read the dialogue silently. Dramatize it (work in pairs)

New Words

1. about- приблизительно, около; о, об
2. appear - появляться
3. arrive - прибывать, приезжать
4. boat - лодка
5. coach - карета
6. decide - решать
7. direction - направление
8. in the direction of – в направлении
9. double-decked bus – двухэтажный автобус
10. early - рано
11. enough – достаточно, довольно
12. follow - следовать
13. forest - лес
14. horse – лошадь
15. horse-races – скачки
16. on horseback – верхом на лошади
17. lose (lost) - терять
18. lose the way - заблудиться

19. mile - миля
20. money - деньги
21. pass – проходить; передавать
22. passing - проходящий
23. route - маршрут
24. (the) same – то же самое
25. several - несколько
26. slow - медленный
27. slowly - медленно
28. station - станция
29. through – через, сквозь
30. tomorrow - завтра
31. tram - трамвай
32. travel – путешествовать
33. tube – труба (метро в Лондоне)
34. turn – поворачивать(-ся)
35. underground – метрополитен
36. various – разный (различный)
37. way – путь (способ)

TEXT 7

Exercise 1. *Read and translate the text*

American Cars

Let's take a ride in one of our cars. Do you like music? Some of our cars have stereo radios with cassette and CD players in them. Some big cars even have televisions and video machines! Many people have telephones in their cars too! Have you ever called home from your car?

In our cars we have windows that roll up or down by touching a button. And you can lock and unlock the doors by pushing a different button.

Almost every car has a heater and an air conditioner to keep us warm in the winter and cool in the summer.

We love our cars and we spend a lot of time in them. Some cars will tell you the outside temperature and what direction you are traveling (north, south, east or west) I've even seen cars that talk to you! Can you imagine a car telling you to put your seatbelt on? Most Americans always use a seatbelt.

New Words

- | | |
|---|---|
| 1. stereo- стерео | 11. direction- направление |
| 2. cassette- кассета | 12. to put on – надевать |
| 3. CD player – проигрыватель компакт-дисков | 13. seatbelt –ремень безопасности. |
| 4. video- видео | 14. turn signals- поворотные сигналы |
| 5. to roll- катить(ся) | 15. headlights- фары |
| 6. to lock- запирать | 16. hood – капот двигателя |
| 7. to unlock – отпирать | 17. windshield wipers- стеклоочистители, «дворники» |
| 8. heater- радиатор | 18. steering wheel- руль |
| 9. air conditioners – кондиционер | 19. horn-сигнал |
| 10. cool – прохладный | 20. mirror- зеркало |

21. trunk- багажник
22. gas tank – бак для топлива
23. tall lights- задние фары

24. bumper- бампер
25. tire- шина
26. brake – тормоз

Exercise 2. *Below are descriptions of some car parts. Read each one and then write the parts of the car.*

1. You use these when you want to go left or right
2. You use it to stop.
3. You use it to lessen the effect of collision
4. You can put luggage in here
5. You turn this to steer the car
6. You use this to warn other drivers
7. You put gas in it
8. This covers the engine
9. You turn these on at night
10. This is the band of rubber on the rim (обод) of the wheel.

New Words

- | | |
|----------------------------|-------------------|
| 1. to lessen- уменьшить | 5. engine- мотор |
| 2. collision- столкновение | 6. band- полоса |
| 3. to warn – предупреждать | 7. rubber- резина |
| 4. to cover- покрывать | 8. wheel- колесо |

TEXT 8

Exercise 1. *Read and translate the text*

The profession of automechanic.

Convenience seems to be the most common and most logical answer: cars take you where you want to go and when you want to go there. Besides, a car is a way of self-expression. But any car can not exist for a long time without a professional service. The representatives of this service are automechanic.

An automechanic of nowadays is a qualified worker of a wide profile, who fulfils a technical service and repairs of engine and any means of transport in a whole.

A specialist of this profession is able to define faulty signs at the first sight.

At our technical college the students learn the car device: its units and the system of assembly the sets.

He must gain the knowledge to define and remove faulty despairs in electrical equipment and in the system of control.

He acquires new skills in current and capital repairs of an automobile. He must know the latest models of motorcar constructions in automobile industry.

As the park of transport means in our country increases from year to year we need greatly the profession of qualified automechanics.

Exercise 2. *Answer the questions to the text*

1. What is the text about?
2. How can you an automechanic of nowadays?
3. What is a specialist of this profession is able to do?
4. What do the students of our technical college learn?
5. What the knowledge do they gain?
6. Why do we greatly need the profession of qualified automechanics?

Exercise 3. Give English equivalents to the Russian words and word combinations

Квалифицированный работник широкого профиля, выполнять, транспортное средство, определять неполадки, с первого взгляда, устройство автомобиля, электрооборудование, система контроля, приобретать умение, текущий и капитальный ремонт, последние навыки автомобилестроения, транспортный парк, нуждаться, год от года.

Exercise 4. Put the word combinations according to the text

We need greatly, the profession of an automechanic, from year to year, transport means, increase, current and capital repairs, the latest fashions, automechanics industry, is able to define, at the first sight, a qualified worker, students learn, the system of assembly the sets, do define.

Exercise 5 Match the columns, guessing by context

- | | |
|--|---|
| 1. An automechanic of nowadays is... | - we need greatly the profession of qualified automechanics. |
| 2. A specialist of this profession is able... | - is a qualified worker of a wide profile. |
| 3. He acquires new skills... | - to define faulty signs at the first sight. |
| 4. He must know... | - in current and capital repairs of an automobile. |
| 5. As the park of transport means increases... | - the latest models of motorcar constructions in automobile industry. |

Exercise 5. Tell the text

TEXT 9

Exercise 1. Read and translate the text

Construction of an automobile.

The primary components of a car are the power plant, the power transmission, the running gear, and the control system. These constitute the chassis, on which the body is mounted.

The power plant includes the engine and its fuel, the carburetor, ignition, lubrication, and cooling systems, and the starter motor.

The Engine.

The greatest number of cars use piston engines. The four-cycle piston engine requires four strokes of the piston per cycle. The first downstroke draws in the petrol mixture. The first upstroke compresses it. The second downstroke the power stroke following the combustion of the fuel, supplies the power, and the second upstroke evacuates the burned gases. Intake and

exhaust valves in the cylinder control the intake of fuel and the release of burned gases. At the end of the power stroke the pressure of the burned gases in the cylinder is 2.8 to 3.5 kg/sq cm. These gases escape with the sudden opening of the exhaust valve. They rush to a silencer (muffler), an enlarged section of piping containing expanding ducts and perforated plates through which the gases expand and are released into the atmosphere.

Greater smoothness of operation of the four-cycle engine were provided by the development of the four-cylinder engine, which supplies power from one or another of the cylinders on each stroke of the cycle. A further increase in power and smoothness is obtained in engines of 6, 8, 12, and 16 cylinders, which are arranged in either a straight line or two banks assembled in the form of a V.

Exercise 2. Answer the questions to the text

1. What are the primary components of a car?
2. What does the power plant include?
3. What do the greatest number of cars use?
4. What does the engine consist of?
5. How many?
6. Cycles does the engine require?
7. What were greater smoothness of operation of the four-cycle engine were provided by?
8. How is a further increase in power and smoothness obtained in engines?
- 9.

Exercise 3. Give English equivalents to the Russian words and word combinations

- | | |
|-----------------------------|---|
| 1. Поршневой двигатель | 10. Карбюрация/ карбюратор |
| 2. Цикл | 11. Охлаждение |
| 3. Четырехтактный двигатель | 12. Стартер |
| 4. Горючий газ | 13. Автоматическая и ручная коробка передач |
| 5. Выхлопная труба | 14. Сцепление |
| 6. Устройство | 15. Коробка передач |
| 7. Двигатель | 16. Полуавтоматический |
| 8. Зажигание | |
| 9. Смазка | |

Exercise 4. Translate into English

1. Они представляют собой шасси, на котором устанавливается рама.
2. Наибольшее количество автомобилей используют поршневые двигатели.
3. Первое движение цикла затягивает бензиновую смесь.
4. Второе движение вверх выводит сгоревшие газы.
5. Эти газы выводятся с открытием выпускного клапана.
6. Который обеспечивает питание на каждый такт двигателя.

TEXT 10

Exercise 1. Read and translate the text

Carburation

Air is mixed with the vapour of the petrol in the carburetor. To prevent the air and the carburetor from becoming too cold for successful evaporation of the fuel, the air for the carburetor is usually taken from a point close to a heated part of the engine. Modern carburetors are fitted with a so-called float-feed chamber and a mixing or spraying chamber. The first is a small chamber in which a small supply of petrol is maintained at a constant level. The petrol is pumped from the main tank to this chamber, the float rising as the petrol flows in until the desired level is reached, when the inlet closes. The carburetor is equipped with such devices as accelerating pumps and economizer valves, which automatically control the mixture ratio for efficient operation under varying conditions. Level-road driving at constant speed requires a lower ratio of petrol to air than that needed for climbing hills, for acceleration, or for starting the engine in cold weather. When a mixture extremely rich in petrol is necessary, a valve known as the choke cuts down the air intake, permitting large quantities of unvaporized fuel to enter the cylinder.

Exercise 2. Answer the questions to the text

1. Where is air mixed with the vapour of the petrol in the car?
2. Where is air for the carburetors usually taken from?
3. What are modern carburetors fitted with?
4. What is the carburetor is equipped with?
5. What is necessary when a mixture extremely rich in petrol?

Exercise 3. Give English equivalents to the Russian words and word combinations

- | | |
|--------------------|-----------------------|
| 1. Смешивать | 5. Оборудование |
| 2. Бензиновые пары | 6. Скорость |
| 3. Карбюратор | 7. Заводить двигатель |
| 4. Камера, полость | 8. Топливо (горючее) |

Exercise 4. Translate into English

1. Воздух смешивается с парами бензина в карбюраторе.
2. Современные карбюраторы оснащены так называемой смешивающей камерой.
3. Бензин подается из основного бака в этой камере.
4. Автоматически контролируют соотношение смеси для эффективной работы в различных условиях.
5. Позволяя большим количествам не выпаренного топлива войти в цилиндр.

TEXT 11

Exercise 1. Read and translate the text

The Clutch

Some type of clutch is found in every car. The clutch may be operated by means of a foot pedal, or it may be automatic or semi-automatic. The friction clutch and the fluid coupling are the two basic varieties. The friction clutch, which depends on solid contact between engine and transmission, consists of: the rear face of the flywheel; the driving plate, mounted to rotate with the flywheel; and the driven plate, between the other two. When the clutch is engaged, the

driving plate presses the driven plate against the rear face of the flywheel. Engine power is then delivered through the contacting surfaces to the transmission.

Fluid coupling may be used either with or without the friction clutch. When it is the sole means of engaging the engine to the transmission, power is delivered exclusively through an oil medium without any contact of solid parts. In this type, known as a fluid drive, an engine-driven, fan-bladed disc, known as fluid flywheel, agitates the oil with sufficient force to rotate a second disc that is connected to the transmission. As the rotation of the second disc directly depends on the amount of engine power delivered, the prime result of fluid coupling is an automatic clutch action, which greatly simplifies the requirements for gear shifting.

Exercise 2. Answer the questions to the text

1. How may the clutch be operated?
2. How does the friction clutch work?
3. What is a fluid drive?
4. What is the friction clutch?
5. What is the prime result of fluid coupling?

Exercise 3. Give English equivalents to the Russian words and word

1. ножная педаль
2. фрикционная муфта
3. задняя поверхность маховика
4. ведомый диск
5. приводная пластина
6. мощность двигателя
7. гидравлическая муфта
8. коробка передач

Exercise 4. Translate into English

1. Какой-либо вид сцепления находится в каждом автомобиле.
2. Фрикционная муфта и гидравлическое сцепление является двумя основными разновидностями.
3. Мощность двигателя затем доставляется через соприкосновение поверхностей до передачи.
4. Мощность передается исключительно через масляную среду без какого-либо контакта твердых частей.
5. Гидравлический маховик, перемешивающий масло с достаточной силой.

TEXT 12

Exercise 1. Read and translate the text

Ignition.

The mixture of air and petrol vapour delivered to the cylinder from the carburettor is compressed by the first upstroke of the piston. This heats the gas, and the higher temperature and pressure facilitate and quick combustion. The next operation is that of igniting the charge by a spark plug. One electrode is insulated by porcelain or mica; the other is grounded through the

metal of the plug, and both form part of the secondary circuit of an induction system.

The principal type of ignition now commonly used is the battery-and-coil system. The current from the battery flows through the coil and magnetizes the iron core. When this circuit is interrupted at the distributor points by the interrupter cam, a current is produced in the primary coil with the assistance of the condenser. This induces a high-voltage current in the secondary winding. This secondary high voltage is needed to cause the spark to jump the gap in the spark plug. The spark is directed to the proper cylinder by the distributor, which connects the secondary coil to the spark plugs in the several cylinders in their proper firing sequence. The interrupter cam and distributor are driven from the same shaft, the number of breaking points on the interrupter cam being the same as the number of cylinders.

The electrical equipment controls the starting of the engine, its ignition system, and the lighting of the car. It consists of the battery, a generator for charging it when the engine is running, a starter and the necessary wiring. Electricity also operates various automatic devices and accessories, including windscreen wipers, directional signals, heating and air conditioning, cigarette lighters, powered windows and audio equipment.

Exercise 2. Answer the questions to the text

1. How is the mixture of air and petrol vapour compressed by?
2. What facilitates ignition and quick combustion?
3. What is the next operation of igniting?
4. What is the principal type of ignition now?
5. Where is the spark directed?
6. What does the electrical equipment control?

Exercise 3. Give English equivalents to the Russian words and word

- | | |
|--------------------|----------------------------|
| 1. Так называемый | 5. Заглушка |
| 2. Быть оснащенным | 6. Горизонтальное движение |
| 3. Коэффициент | 7. Поток |
| 4. Зажигание | 8. Железный кожух |

Exercise 4. Translate into English

1. Следующая операция заключается в воспламенении зарядом от свечи.
2. Неотъемлемую часть вторичной цепи индукционной системы.
3. Если эта цепь прервана на распределителе точек прерывателя камеры.
4. Искра направленная на находящийся с цилиндром распределитель.
5. Кулачок прерывателя и распределителя приводятся в работу от одного вала.
6. Состоит из аккумулятора, генератора для зарядки, стартера и необходимой проводки.

TEXT 13

Exercise 1. Read and translate the text

Cooling

At the moment of explosion, the temperature within the cylinder is much higher than the melting point of cast iron. Since the explosions take place as often as 2,000 times per minute in each cylinder, the cylinder would soon become so hot that the piston, through expansion, would "freeze" in the cylinder. The cylinders are therefore provided with jackets, through which water is rapidly circulated by a small pump driven by a gear on the crankshaft or camshaft. During cold

weather, the water is generally mixed with a suitable antifreeze, such as alcohol, wood alcohol, or ethylene glycol.

To keep the water from boiling away, a radiator forms part of the engine-cooling system. Radiators vary in shape and style. They all have the same function, however, of allowing the water to pass through tubing with a large area, the outer surface of which can be cooled by the atmosphere. In air cooling of engine cylinders, various means are used to give the heat an outlet and carry it off by a forced draught of air.

Exercise 2. Answer the questions to the text

1. What is the temperature within the cylinder?
2. Why are the cylinders provided with the jackets?
3. What is mixed during the cold weather?
4. What do you know about the radiators?

Exercise 3. Give English equivalents to the Russian words and word

1. в каждом цилиндре
2. защищены рубашками
3. шкив коленчатого вала
4. вода быстро циркулирует
5. составляет часть системы охлаждения двигателя
6. имеют одну и ту же функцию
7. может охлаждаться

Exercise 4. Translate into English

1. В момент взрыва температура внутри цилиндра намного выше, чем точка плавления чугуна.
2. Приводящей в движение механизм коленчатого вала или распределительного вала.
3. Во время холодной погоды вода в основном смешивается с подходящим антифризом.
4. Чтобы предотвратить выкипание воды радиатор составляет часть системы охлаждения двигателя.
5. Радиаторы различаются по форме и стилю.

TEXT 14

Exercise 1. Read and translate the text

The Power Transmission

The engine power is delivered first to the flywheel and then to the clutch. From the clutch, which is the means of coupling the engine with the power-transmission units, the power flows through the transmission and is delivered into the rear-axle drive gears, or differential, by means of the drive shaft and universal joints. The differential delivers the power to each of the rear wheels through the rear-axle drive shafts.

Exercise 2. Answer the questions to the text

1. Where is the engine power delivered?

2. What is the means of coupling the engine?
3. How does the power deliver to the river wheels?
4. What is the role of power transmission?

Exercise 3. Give English equivalents to the Russian words and word

1. которое является средством соединения
2. доставляется к приводным шкивам
3. универсальные шарниры
4. через заднюю ось приводных шпинделей
5. мощность двигателя

Exercise 4. Translate into English

1. Мощность двигателя доставляется сначала к маховику, а затем к сцеплению
2. Сцепление является средством соединения двигателя с коробкой передач.
3. Мощность передается через коробку передач и доставляется на заднюю ось приводных шестерен.
4. Через заднюю ось приводных шестерен.

TEXT 15

Exercise 1. Read and translate the text

The Starter

The petrol engine must usually be set in motion before an explosion can take place and power can be developed; moreover, it cannot develop much power at low speeds. These difficulties have been overcome by the use of gears and clutches, which permit the engine to work at a speed higher than that of the wheels, and to work when the vehicle is at rest. An electric starter receiving its current from the storage battery, turns the crankshaft, thus starting the petrol engine. The starter motor is of a special type that operates under a heavy overload, producing high power for very short periods. In modern cars, the starter motor is automatically actuated when the ignition switch is turned on.

Exercise 2. Answer the questions to the text

1. When must the petrol engine usually set in motion?
2. How have these difficulties been overcome?
3. What does an electric starter receive from the storage battery?
4. Where is the starter motor automatically actuated?

Exercise 3. Give English equivalents to the Russian words and word

1. привести в движение
2. большая мощность на низких скоростях
3. позволяет двигателю работать
4. когда автомобиль находится в покое
5. развивая высокую мощность за короткие периоды

6. автоматически приводится в действие
7. ключ в зажигании повернут

Exercise 4. *Translate into English*

1. Не может развить много мощности на низких скоростях.
2. Которые позволяют двигателю работать на скорости выше.
3. Электрический стартер получает свой ход от аккумуляторной батареи.
4. Стартер мотора является особым типом устройства который действует с сильной перегрузкой.
5. В современных машинах стартер мотора автоматически приводится в действие.

TEXT 16

Exercise 1. *Read and translate the text*

Manual and Automatic Transmission.

The transmission is a mechanism that changes speed and power ratios between the engine and the driving wheels. Three general types of transmission are in current use: conventional or sliding-gear, Hydra-Matic, and torque-converter systems.

The conventional transmission provides for three or four forward speeds and one reverse speed. It consists of two shafts, each with gears of varying diameters. One shaft drives the other at a preselected speed by meshing the appropriate set of gears. For reverse speed/an extra gear, known as the idler gear, is required to turn the driven shaft in the opposite direction from normal rotation. In high gear, the two shafts usually turn at the same speed. In low, second, and reverse gears, the driven shaft turns more slowly than the driving shaft. When a pair of gears permits the driven shaft to turn more rapidly than the driving shaft, the transmission is said to have overdrive. Overdrive is designed to increase the speed of a car.

The Hydra-Matic type of transmission combines the automatic clutch provided by fluid coupling with a semiautomatic transmission. A mechanical governor, controlled by the pressure exerted on the accelerator pedal, regulates gear selection through a system of hydraulically controlled shift valves. Hydra-Matic transmission provides for several forward gears. The torque-converter type of transmission provides an unlimited number of gear ratios with no shifting of gears.

The torque converter is a hydraulic mechanism using engine power to drive a pump, which impels streams of oil against the blades of a turbine. The turbine is connected to the drive shaft and causes it to rotate.

Both Hydra-Matic and torque-converter systems are controlled by a selector lever on the steering column, which provides also for reverse and sometimes for emergency-low gears.

Exercise 2. *Answer the questions to the text*

- 1.. How is the term transmission defined in the text?
2. How many types of transmission are there in current use?
3. What is the conventional transmission?
4. What is overdrive?
5. What is the Hydra-Matic type of transmission?
6. What is the torque-converter of transmission?

Exercise 3. Give English equivalents to the Russian words and word

- | | |
|------------------------------------|------------------------------|
| 1.. Механическая трансмиссия- | 6. Задний ход- |
| 2. Автоматическая коробка передач- | 7. Ось, вал- |
| 3. Коэффициент, отношение- | 8. Промежуточная шестерня- |
| 4. Зубчатая передача, механизм- | 9. Автоматическое сцепление- |
| 5. Скольжение- | 10. Гидротрансформатор- |

Exercise 4. Translate into English

1. Три основных типа передачи в текущем использовании.
2. Один вал приводит в движение другой на заранее выбранной скорости.
3. Преобразователь крутящего момента представляет собой гидравлический механизм.
4. Турбина соединена с приводным валом и заставляет его вращаться.
5. Управляются с помощью рычага селектора на рулевой колонке.

TEXT 17**Exercise 1. Read and translate the text****The Running Gear.**

The running gear of the car includes the wheel-suspension system, the stabilizers, and the wheels and tyres. The frame of the car may be considered the integrating member of the running gear. It is attached to the rear axle and to the front wheels by springs. These springs, along with the axles, the control and support arms, and the shock absorbers, constitute the wheel-suspension system. In modern cars the front wheels are independently suspended from the frame in a manner that permits either wheel to change its plane without appreciably affecting the other. This type of front-wheel suspension is known popularly as independent suspension. The stabilizers consist of spring-steel bars, connected between the shock-absorber arms by levers, to decrease body roll and improve steerability.

Exercise 2. Answer the questions to the text

1. What does the running gear of the car includes?
2. What is the integrating member of the running gear?
3. What does the wheel-suspension system constitute?
4. What is the type of independent suspension?
5. What does the stabilizers consist of?

Exercise 3. Give English equivalents to the Russian words and word

- | | |
|--------------------------------|----------------------|
| 1. Ходовая часть- | 6. Подлокотник- |
| 2. Колесно- подвесная система- | 7. Стабилизатор- |
| 3. Шины- | 8. Управляемость- |
| 4. Задний мост- | 9. Составлять- |
| 5. Рессоры- | 10. Рессорная сталь- |

Exercise 4. Translate into English

1. Ходовая часть автомобиля включает систему подвески колес.
2. Можно считать интегрирующим элементом ходовой части.
3. В современных автомобилях передние колеса независимо друг от друга подвешены к раме.
4. Стабилизаторы состоят из пружин стальных стержней.
5. Чтобы уменьшить крен кузова и улучшить управляемость.

Vocabulary:

1. explosion – взрыв, взрывчатое вещество
2. within – внутри
3. melting point – точка плавления
4. cast iron – чугун
5. piston – поршень
6. expansion – расширение
7. cylinder – цилиндр
8. boil away – выкипать
9. jacket – чехол, кожух, рубашка
10. tubing – труба, трубопровод
11. heat – нагрев, накал
12. outlet – выходное отверстие, выход
13. carry off – уносить, выдерживать
14. forced draught- искусственная тяга
15. camshaft – распределительный вал
16. set in motion – приводить в движение
17. developed – разрабатывать, совершенствовать
18. moreover – сверх того, кроме того
19. permit – позволять, давать возможность
20. current – течение, ход
21. storage – хранение, аккумулярование
22. crankshaft – коленчатый вал
23. overload – перегружать, перегрузка
24. actuated – приводить в действие
25. ignition – зажигание
26. shaft – вал, ось, шпиндель
27. engine – машина, двигатель
28. deliver – доставлять
29. flywheel – маховик
30. coupling – соединение
31. rear – задняя сторона, задний
32. axle – ось
33. gear – зубчатая передача, шестерня, механизм
34. joints - соединения
35. clutch – сцепление, муфта сцепления
36. fluid – жидкий, жидкость
37. coupling – соединение
38. solid – твердый, прочный
39. mount – подниматься, устанавливать
40. rotate – вращать, вращаться
41. engage – зацеплять

- 42.sole – единственный, исключительный
- 43.agitate – мешать, перемешивать
- 44.force – нагнетать
- 45.gear – зубчатая передача, шестерня, механизм
- 46.shift – передвижение

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